SERUM AND VACCINE THERAPY IN CONNEXION WITH DISEASES OF THE EYE.

THE MIDDLEMORE PRIZE ESSAY, BRITISH MEDICAL ASSOCIATION, 1911.

BY C. W. G. BRYAN, F.R.C.S.ENG.,

LATE ASSISTANT IN THE DEPARTMENT FOR THERAPEUTIC INOCULATION, ST. MARY'S HOSPITAL; AND HOUSE-SURGEON, OXFORD EYE HOSPITAL.

I.

THE subject of serum and vaccine therapy in relation to diseases of the eye is one which has received a large amount of attention, and on which a great deal of work has been done during recent years.

The treatment of eye diseases by serums and vaccines differs from similar treatment of disease in any other part of the body owing to the anatomical peculiarities of the blood and lymph supply of this organ.

The cornea and vitreous have in the healthy condition no blood vessels, and are feebly nourished by lymph; the lymph circulation of the intrinsic parts of the eyeball is, however, not free, and this is exemplified by the rarity with which malignant growths of the interior of the eyeball give rise to secondary deposits in glands until the growth by direct spread has extended outside the sclerotic coat.

Again, in those parts of the eye where there is a supply of blood vessels the distribution of the blood in these vessels is constantly varying owing to the unceasing movements of the eye as a whole, and of its various parts—the iris, ciliary body, etc. These movements are of importance when the eye is infected, as they cause the setting free of bacterial substances, toxins, etc., in the blood stream. This subject of autoinoculation will be discussed later in connexion with vaccine therapy.

Immunity against disease due to infection may be acquired actively or passively. Vaccine therapy is concerned in the production of active immunity, serum therapy deals with the production of passive immunity.

VACCINE THERAPY.

Active immunity can be acquired in two ways—either by auto-inoculation by bacterial substances set free in the blood stream from some focus of disease, or by the methods of hetero-inoculation—that is, by the absorption of vaccine, usually injected into the subcutaneous tissues. In disease of the eye auto-inoculation is an unsatisfactory method of producing immunity, owing to the limited blood and lymph flow in the eye, and to the fact that the size of the area of infection, as compared with the body as a whole, is small, and therefore great disturbance of this small area would be necessary to produce any marked auto-inoculation.

In using vaccines it is necessary as far as possible to prevent auto-inoculation by keeping the diseased part at rest, and this is a difficulty with which we have specially to contend in dealing with eye diseases. If auto-inoculation takes place at the time that treatment by hetero-inoculation is being carried out, substances of unknown amount may be set free in the blood stream at unfavourable times, interfering with the regulation of the dosage of vaccine.

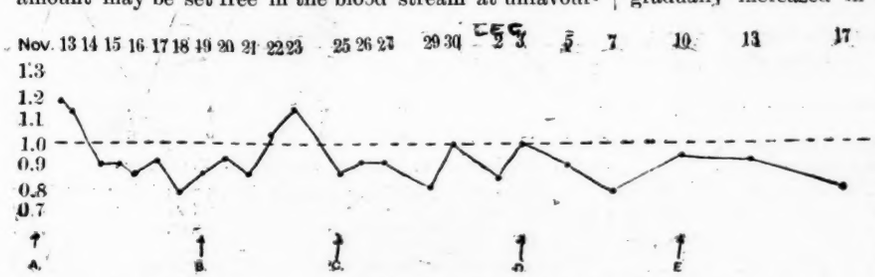


Chart 1.—A, Opsonic index. B, $\frac{1}{25000}$ mg. C, $\frac{1}{10000}$ mg. D, $\frac{1}{3333}$ mg. E, $\frac{1}{1000}$ mg.

Sir Almroth Wright and his disciples have shown by means of the opsonic index that the injection of vaccine into an infected subject causes changes in the blood, changes which vary with the amount of vaccine given. The opsonic index is a means of gauging the amount of opsonin in the blood serum, opsonin being some substance which so acts on bacteria that the phagocytes of the blood are able to ingest these bacteria. Injection of vaccine has as its aim the increase of the opsonins in the blood, but the effect of vaccine on the amount of opsonin, as shown by the opsonic index, varies with the amount of vaccine which is injected.

According to the amount of vaccine given, four effects may be obtained.

1. If a small dose be given to an infected person, no effect may be produced, as shown in Chart 1, of a patient suffering from undoubted tuberculosis. Here doses of tuberculin (bacillary emulsion) varying from $\frac{1}{30000}$ to $\frac{1}{4000}$ mg. were given, and twenty-four opsonic indices taken with no variation greater than would be within limits of normal.

2. A dose which has only a slight effect causes changes in the amount of opsonin in the blood—first, a rapid slight rise of the opsonic index, then a gradual fall to the level at which the index stood before the inoculation.

3. The usual effect of an efficient dose of vaccine is to cause first a fall (this being called the "negative phase") followed by a rise ("positive phase") the index gradually again falling to the level at which it was before the vaccination. A slight variation of this curve is occasionally seen in a small rise, lasting a few hours, occurring before the negative phase sets in.

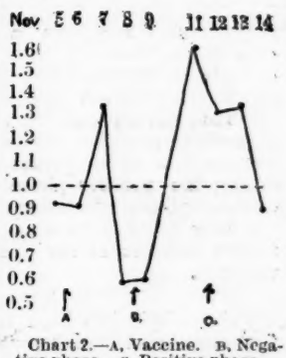


Chart 2.—A, Vaccine. B, Negative phase. C, Positive phase.

4. If an overdose be given, then the only effect is a negative phase lasting a long time, the index gradually rising to near its former level.

With regard to the doses necessary in diseases of the eye, the general statement may be made that larger doses of vaccine are necessary than in treating disease elsewhere, because the blood and lymph flow being limited, a less amount of opsonin will be brought in contact with the diseased area, and also the risk of toxic effect is less, as the area of infection is small.

It has been found that clinical symptoms vary directly with variations of the opsonic index. During the positive phase the patient's general condition improves, as shown by a drop in the temperature in febrile cases and alleviation of symptoms generally; locally also symptoms are relieved. In eye disease pain becomes less, discharge decreases, ciliary injection diminishes, vision improves, etc. Conversely, during the negative phase symptoms are aggravated.

The aim of Wright's system of inoculation is to produce by repeated injections negative phases as short as possible, followed by positive phases as long as possible, the vaccine being reinjected as the positive phase decreases. In this way the disease gradually becomes cured. The dose to produce this effect, at first small, has to be gradually increased in amount. The interval between inoculations varies according to the nature of the disease.

It is possible without the opsonic index to regulate the amount of vaccine by observation of clinical manifestations. In febrile diseases the temperature varies in inverse ratio to the opsonic index, as is shown by Latham and Inman,[1] and, after a suitable dose of vaccine, the temperature falls, rising again when the effect of the vaccine wears off. The vaccine is then repeated.

In eye disease, by direct inspection, we have a ready means of regulating the treatment by vaccines. In disease of the iris, cornea, and sclerotic vascular injection of the conjunctiva decreases after an efficient dose of vaccine, though if a negative phase is produced the injection may,

while the negative phase lasts, be temporarily increased. This is well shown by a case of tuberculous keratitis which was treated by myself, the course of treatment being regulated by the amount of vascular injection. Whenever the eye became inflamed tuberculin was given, and each dose was followed by a period of absence of injection and of photophobia, until finally the condition became absolutely quiescent.

CASE.

R. M. suffered from keratitis for five years. From March to June, 1908, was treated with tuberculin B.E., regulated by observations of the opsonic index; after this treatment was regulated by the amount of conjunctival injection, which, when present, was associated with photophobia.

June 5th. Eyes quiet.
June 10th. Right eye inflamed.
June 11th. $\frac{1}{5000}$ mg. given.
June 14th. Both eyes quiet.
June 22nd. Slight conjunctival injection of left eye. $\frac{1}{5000}$ mg. given.
June 23rd. Both eyes quiet.
June 30th. Much injection of right eye. Photophobia. $\frac{1}{5000}$ mg. given.
July 1st. Slight injection of right eye.
July 2nd. Both eyes quiet.

After July 2nd the eyes showed no more sign of inflammation; corneae continued to clear and vision to improve. Tuberculin treatment was continued until August 26th.

Fromaget[2] mentions a case of tuberculous iridochoroiditis, treated by tuberculin, in which the first four doses were followed by ocular reaction, the fourth also by rise of temperature. Later doses led to marked improvement in local signs and in vision. Here, then, we have an example of negative phases shown by ocular reaction, and one by rise of temperature. The vision also improves during the positive phase as we should expect, and is diminished during the negative phase.

I now propose to deal seriatim with the various infective diseases of the eye which have been treated by vaccines.

TUBERCULOSIS.

Tuberculosis has been treated by vaccine since Koch first introduced his tuberculin in 1890. Disastrous results followed the use of this old tuberculin in the doses recommended by Koch. Treacher Collins[3] mentions the case of a child, aged 9, suffering from tuberculous nodules in the right iris, who was treated by ten injections of old tuberculin, beginning with 1 mg., the dose rising in a month to 7 mg. The original four nodules invaded the whole iris, and the eye was excised.

However, by using smaller doses at longer intervals, good results have been obtained with old tuberculin in eye diseases. De Schweinitz[4] describes two cases of scleritis and keratitis treated by old tuberculin—one case of eight years' standing cured by six weeks' treatment, the other case showing improvement, followed, however, by recurrence.

The general opinion is that the use of old tuberculin is attended by unjustifiable risk, and it has been superseded by less dangerous preparations. Many varieties of tuberculin have been placed on the market, each of which has had its supporters and opponents. It would be unprofitable here to mention more than a few of these products, many of which have been in use for but a short time.

Koch's new tuberculin (tuberculin T.R.) was very largely used, and it was with this preparation that Sir Almroth Wright placed the treatment of tuberculosis on a scientific footing, using small doses regulated by estimations of the opsonic index.

The next variety of tuberculin requiring special mention is the bacillary emulsion; this preparation has been, and is being, used extensively with good results. In a series of cases of ocular tuberculosis which I have treated I used this preparation of tuberculin, and I shall refer to some of my results later.

Mention must be made of the use by R. W. Allen[5] of bovine tuberculin in the treatment of tuberculosis of the eye in human beings. He holds that tuberculosis secondary to phthisis is due to human tubercle bacilli, but that, if secondary to cervical or mesenteric tuberculous glands, the disease may be due to bovine tubercle bacilli. He lays down the following rules:

1. If the disease is primary, commence treatment with human tuberculin, and if no improvement takes place in two or three months, the bovine tuberculin, or a mixture of the two varieties, should be used.

2. If the disease is secondary use the appropriate tuberculin.

Allen claims good results in eye disease from the use of this method.

In recent years the two most important methods of dosage which have been employed in using tuberculin in eye disease are:

1. Wright's method, commencing with a small dose, $\frac{1}{80000}$ to $\frac{1}{10000}$ mg., gradually increasing the dose over a long period of treatment with about ten days' interval between each inoculation, the dosage being regulated by estimations of the opsonic index.

2. Von Hippel's[8] method of treatment with tuberculin T.R., commencing with an initial dose of $\frac{1}{500}$ mg., repeating the inoculation on alternate days, increasing each time by $\frac{1}{500}$ mg. until $\frac{1}{50}$ mg. is reached; after this the dose is increased each time by $\frac{1}{50}$ mg. up to $\frac{1}{5}$ mg.; then, by $\frac{1}{10}$ mg. until a dose of 1 mg. is reached. During the treatment the temperature should not rise above 100° F.; if it does so, the previous dose, or a smaller one, is repeated until there is no rise of temperature after the inoculation.

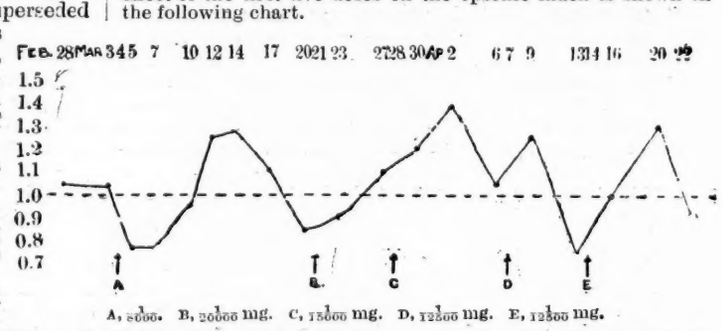
In treating a series of cases at the Oxford Eye Hospital I have used Wright's method, regulating the treatment partly by estimation of the opsonic index, partly by observation of clinical signs and symptoms, temperature, amount of pain and photophobia, effect on vision, and conjunctival injection.

I wish to take this opportunity of expressing my gratitude to Mr. Robert Doyne and the other members of the staff of the Oxford Eye Hospital for their help and encouragement; it was at Mr. Doyne's suggestion that I undertook vaccine therapy while house-surgeon at Oxford, and he not only fitted up a laboratory for me, but gave me permission to make use of all clinical material which was suitable.

Extrinsic Tuberculosis of the Eye.

1. *Tuberculous Conjunctivitis.*—I have treated one case of tuberculous conjunctivitis over a long period with good result.

J. R., aged 61, was first seen in March, 1907, for a lump in the right lower lid of three months' duration; this was removed, but was followed by the appearance in the upper lid of a mass which was treated by caustics and scraping, but continued to increase in size. At the beginning of 1908 the whole of the inner aspects of both lids was covered with fungating granulations, the upper lid projecting over the lower and being thickened to about the size of a hazel nut. Owing to the thickening of the lids the eyeball was hidden, but on raising the upper lid the cornea could be seen, rough and opaque. In January, 1908, a scraping from between the coarse granulations was taken and stained, and tubercle bacilli were found. Treatment by Tuberculin B.E. was commenced in March. The effect of the first five doses on the opsonic index is shown in the following chart.



A, $\frac{1}{8000}$. B, $\frac{1}{20000}$ mg. C, $\frac{1}{15000}$ mg. D, $\frac{1}{12500}$ mg. E, $\frac{1}{12500}$ mg.

Until the end of 1908 the opsonic index was taken regularly and the injections were repeated every ten days, gradually increasing until at the end of the year $\frac{1}{3000}$ mg. was being given. Since that time till the end of 1910 Dr. Coventon, of Oxford, kindly carried on the treatment, and the patient had $\frac{1}{2000}$ mg. every fourteen days. In December, 1910, the conjunctivitis was cured; the conjunctiva was smooth, no injection being present except one small area the size of a pin's head in the upper lid. The thickening had disappeared, the lids being of normal consistency. The eye could be fully opened, and the cornea was smooth and showed only slight opacity at the upper part.

Saxl[6] reports a case of tuberculous conjunctivitis in a woman of 23, treated for two months with tuberculin, and

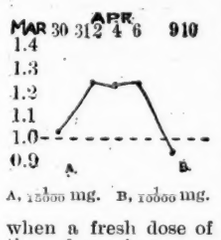
showing improvement. Treatment then ceased, and the condition relapsed. On resuming treatment for a month the condition improved, but afterwards again relapsed and the lids were scraped. Here treatment does not seem to have been persisted in with sufficient patience.

Ormond and Eyre[7] mention a case of tuberculous conjunctivitis in a child suffering from enlargement of cervical glands with sinus. The diagnosis was made certain by removing and microscoping a portion of the conjunctiva, where typical giant cell systems were found. Inoculation in a guinea-pig gave positive result. The patient was treated for eight months with tuberculin with good result, the vaccine being given ever three weeks. Von Hippel[8] reports 3 cases of tuberculous conjunctivitis cured by tuberculin used according to his method. Torok[9] gives the result of tuberculin treatment in 16 cases of eye disease (including 5 cases of tuberculous conjunctivitis) eight of which were cured, and four showed marked improvement.

The results, then, of the treatment of tuberculous conjunctivitis are good provided the treatment be persisted in over a long period.

2. *Interstitial Keratitis.*—I have treated one case of tuberculous interstitial keratitis with excellent result.

The patient, R. M., a boy of 11, had suffered from enlarged cervical glands and phlyctenular ophthalmia since 1901. In February, 1908, active interstitial keratitis was present in the left eye, the whole cornea was steamy, and there was intense ocular injection. The right cornea showed old nebulae and a recent ulcer. Treatment by tuberculin B.E. was commenced in March, regulated by the opsonic index. The effect of the first dose is shown.



A, $\frac{1}{25000}$ mg. B, $\frac{1}{10000}$ mg.

The patient was treated until August, when $\frac{1}{10000}$ mg. was being given. For the first two months treatment was regulated by estimations of the opsonic index; after this, however, clinical signs, onset of redness and photophobia, were sufficient to indicate when a fresh dose of vaccine was required, the administration of vaccine on each occasion being rapidly followed by alleviation of conjunctival injection and pain. Meanwhile the corneae were gradually clearing and vision improving, and treatment was discontinued in August, both eyes being quiet and corneae clear but for old nebulae.

Derby[10] reports 9 cases of interstitial tuberculous keratitis treated with tuberculin with favourable results. Weeks[11] mentions 3 cases treated by von Hippel's method, all of whom recovered.

3. *Scleritis, Sclero-keratitis, Phlyctenular Ophthalmia.*—Nias and Paton[12] have shown the tuberculous nature of most cases of phlyctenular ophthalmia. They examined the opsonic index in a large number of cases, and believed that the condition was due to dead or attenuated tubercle bacilli escaped from a tuberculous focus elsewhere in the body. Allen,[5] however, has found that patients with phlyctenules and episcleritis do not always give Calmette's reaction, and are therefore presumably sometimes not tuberculous. In the majority of cases the patients are children suffering from tuberculous cervical glands, and subject to repeated attacks of scleritis and sclero-keratitis over a long period. In almost every case the condition is associated with some error of refraction, usually hyperopic astigmatism, but the photophobia is such a marked symptom that it is impossible to measure the patient for glasses. These cases react well to tuberculin, and if by this means the eye condition is alleviated, and then suitable glasses are fitted, the treatment by tuberculin, provided there is no obvious focus of tuberculosis elsewhere, can be given up, and the eye trouble does not recur. But, in my experience, if, when the eyes are quiet, the error of refraction is not corrected, there is a great tendency for the keratitis, etc., to recur. The following cases illustrate the effect of tuberculin treatment:

1. N. F., aged 4½. Eyes had been inflamed, with corneal ulcers and phlyctenules, and intense photophobia, for six months. $\frac{1}{25000}$ mg. tuberculin B.E. was injected, and four days later both eyes were well except for faint nebulae. Glasses to correct hypermetropia were fitted. Treatment by tuberculin was continued for nine months, as the patient had bad tuberculous cervical glands, which almost disappeared under the treatment; during this time there was no further eye trouble.

2. V. D. S., aged 4, came under treatment in May, 1908, for large phlyctenule in left eye. On May 6th $\frac{1}{25000}$ mg. B.E. and May 15th $\frac{1}{10000}$ mg. were given, followed by gradual improvement. On May 22nd $\frac{1}{5000}$ mg. was given, followed by a bad negative phase, as shown by the appearance of an ulcer of the right cornea, with hypopyon; the patient also suffered from fever and malaise. The ulcer was healing on May 30th, and after $\frac{1}{12500}$ mg. tuberculin on June 6th the ulcer was quite healed, and both eyes remained quiet.

3. F. B., aged 11, suffered from recurrent attacks of phlyctenular ophthalmia in November, 1907, on February 13th, February 18th, and February 25th, 1908. Corneal ulcer March, 1908. Cultures from the conjunctiva were taken in February, and *Staphylococcus aureus* was grown. The patient had three injections of staphylococcus vaccine prepared from these cultures without any clinical effect. On July 2nd a fresh phlyctenule with conjunctivitis occurred, lasting thirteen days. The same condition set in on July 23rd, and on July 24th $\frac{1}{10000}$ mg. of tuberculin was given, and next day the eye was quiet and the phlyctenule had disappeared. On September 19th conjunctivitis set in; $\frac{1}{10000}$ mg. of tuberculin was given, and on September 21st the eye was perfectly quiet and well.

Here, then, we have a case in which tuberculin on the two occasions where it was used gave immediate relief to a condition which always before had proved very resistant to treatment. The patient showed no other signs of tuberculosis.

4. G. K., aged 1 year, came under treatment in November, 1906, and from then until April, 1908, suffered from phlyctenular ophthalmia and recurrent corneal ulcers; photophobia during all this time was intense. From April 17th to July 27th, 1908, tuberculin, in doses from $\frac{1}{20000}$ to $\frac{1}{10000}$ mg., was given, with gradual improvement. In August the eyes were quiet, and refractive error was measured; 3 D of hypermetropia was present. Glasses were worn, and the eyes remained well.

I have treated 17 other similar cases, all with good results, except one, a boy with enlarged cervical glands. In this case, in spite of tuberculin treatment in doses increasing from $\frac{1}{20000}$ to $\frac{1}{10000}$ mg., and very careful correction of hypermetropia, fresh attacks of phlyctenules continued to occur every few weeks. Derby[10] reports 15 cases of sclero-keratitis treated with favourable results by tuberculin.

Weeks,[11] using von Hippel's method, had 3 recoveries and 2 cases improved of 5 treated.

Hancock and Mayou[13] have treated 4 cases with tuberculin, guiding the treatment by estimation of the opsonic index; the results were good.

Mackay[14] describes a case of keratitis and scleritis of phlyctenular type, later becoming pustular. Treatment by a vaccine of *Staphylococcus aureus* was tried, with amelioration of symptoms, but later a relapse occurred. Tuberculosis was indicated, as the parents were phthisical. Tuberculin, therefore, was tried, and a positive phase, as shown by the opsonic index, was obtained. As I have mentioned, de Schweinitz[4] has obtained a cure in a case of scleritis and keratitis of long standing, using old tuberculin.

Internal Tuberculosis of the Eye.

In internal tuberculosis of the eye we have to deal sometimes with localized lesions of the iris or the choroid, but more often with a generalized tuberculosis of the inner parts of the eye, involving the iris, ciliary body, and the choroid. I have treated one such case over a long period.

M. B., aged 10, first came under treatment in November, 1907, with iritis in the right eye. The vitreous was cloudy, with numerous dustlike opacities, and a few more gross ones. Fundus view poor, but with the appearance of a mass down and out. V. $\frac{6}{12}$. Calmette's test gave a marked reaction in the diseased eye. This test seemed to have a very bad effect, and the eye, immediately after the test was carried out, became gradually worse. Patient was treated with tuberculin from March, 1908, beginning with $\frac{1}{25000}$ mg., the dose being gradually increased, until in December, 1908, $\frac{1}{5000}$ mg. was being given every ten days. The treatment was continued until October, 1909, and at that date the anterior chamber was occupied by a greyish exudate, there was exudation behind the lens, vision was only "hand reflex," and tension was soft. The dosage of tuberculin was regulated by the opsonic index, there being no clinical indications for guidance. The diagnosis was made certain by a positive von Pirquet's reaction, and a Wassermann test was also done and was negative.

In this case, then, the condition continued quietly to progress despite treatment. Better results than this have, however, been obtained in other hands.

Iritis.

Hancock and Mayou,[13] using Wright's method, report 5 cases of tuberculous iritis successfully treated. Weeks[11] reports a case of conglomerate tuberculosis of the iris cured by von Hippel's method. Shieck[15] commences with

0.002 mg., repeating the dose on alternate days, each time increasing it by 0.001 mg. He has treated 5 cases of tuberculous iritis, which have improved either immediately or after a temporary increase in intensity at the beginning of treatment. Treacher Collins and Lawford[16] mention good results obtained by tuberculin in the treatment of iritis. Clarke and Mayou obtained a cure in a case of tuberculous iritis in nine months, using $\frac{1}{100}$ mg. every two or three weeks. Von Hippel[8] obtained cures in 23 cases of tuberculous iritis.

Many other cases of tuberculous iritis cured by tuberculin have been reported by Haab,[20] Wolfrum,[23] and Ziegler.[24]

Kerato-iritis.

Derby[10] has treated 6 cases of kerato-iritis with favourable result.

Irido-choroiditis.

Fromaget[17] reports a successful and interesting case. A female, aged 28, with no signs of visceral tuberculosis, for three weeks had had painful irido-cyclitis of the left eye; vision = $\frac{1}{6}$; fundus invisible. Two months of ordinary treatment did not improve the condition. In December, 1909, four injections of tuberculin were followed by ocular reaction, the last also by rise of temperature. In January and February, 1910, nine injections were given, and later more injections. The irido-cyclitis became much better, the vitreous cleared, the vision improved to $\frac{1}{3}$. When the fundus was visible there was seen an atrophic patch in the choroid, evidently a cured tuberculous lesion.

Choroiditis.

Using von Hippel's method, Weeks[11] has obtained improvement in four cases of tuberculosis of the choroid. Ernest Clarke and Wright,[18] using the opsonic index as a control, cured a case of conglomerate tubercle of the choroid with tuberculin. The case was diagnosed by the varying tuberculo-opsonic index. Treatment by mercury and potassium iodide was carried on for the first nine months while tuberculin was being used. W. Kraus and A. Bruckner[26] report two cases of tubercle of the fundus treated successfully by tuberculin. Hay[25] mentions cases of tuberculous retinitis cured or treated with success by means of von Hippel's treatment.

In internal tuberculosis of the eye, then, we find that the results of treatment by vaccine are good, especially where the iris is the diseased tissue. The iris is favourable for treatment because it has a good blood supply. In tuberculosis of the fundus, where the blood and lymph supply are poor, treatment has to be prolonged, and is less certainly successful. It may be mentioned here that in disease of the iris it is necessary to use mydriatics to prevent the formation of synechiae, and, the blood supply in this way being diminished, treatment rather tends to be prolonged, owing to the difficulty of getting sufficient opsonins into the diseased tissues.

REFERENCES.

1 Latham and Inman: *Lancet*, 1908.
2 Fromaget: *L'Ophthal. Provinciale*, Juin, 1910.
3 Treacher Collins: *Ophthalmoscope*, 1907.
4 De Schweinitz: *Therapeutic Gazette*, October 15th, 1910.
5 Allen: *Practitioner*, 1908, p. 737.
6 Saxl: *Archiv f. Augenheilk.*, June, 1907, p. 328.
7 Ormond and Eyre: *Trans. Ophthal. Soc. U. K.*, vol. xxviii.
8 Von Hippel: *Arch. f. Ophthal.*, B. 6, 59, p. 1.
9 Torok: *Arch. of Ophthal.*, September, 1907.
10 Derby: *Trans. Amer. Ophthal. Soc.*, vol. xii, Part II, 1910, p. 614.
11 Weeks: *Trans. Amer. Ophthal. Soc.*, vol. xii, Part II, 1910, p. 598.
12 Nias and Paton: *Lancet*, December 1st, 1906.
13 Hancock and Mayou: *Ophthalmoscope*, July, 1907.
14 Mackay: *Trans. Ophthal. Soc. U. K.*, vol. xxviii.
15 Schieck: *Arch. f. Ophthal.*, 1900, II, p. 247.
16 Treacher Collins and Lawford: *Trans. Ophthal. Soc. U. K.*, vol. xxx.
17 Fromaget: *L'Ophtal. Provinciale*, Juin, 1910.
18 Ernest Clarke and Wright: *Trans. Ophthal. Soc. U. K.*, vol. xxviii, p. 192.
19 Clarke and Mayou: *Trans. Ophthal. Soc. U. K.*, vol. xxviii.
20 At Ophthalmological Congress in Heidelberg, 1905.
21 Rennert: *Deut. med. Woch.*, 1905.
22 Dorschleg, Inaug. Dissert., Griefswald, 1905.
23 Wolfrum: *Arch. f. Augenheilk.*, B. 1, p. 1.
24 Ziegler: *Trans. Amer. Ophthal. Soc.*, 1906.
25 Hay: *Ophthalmoscope*, 1908.
26 Kraus and Bruckner: *Arch. f. Augenheilk.*, May, 1907.

(To be continued.)

THE annual report relating to the Nurses' Co-operation, 8, New Cavendish Street, shows that last year's work was satisfactory, the fees received by members of the nursing staff aggregating a higher sum than in any previous year. The sickness and accident insurance policies, for which arrangements were made for the benefit of the staff some three years ago, continue to prove highly advantageous.

An Address

ON

CASES ILLUSTRATING SOME INTRACRANIAL CONDITIONS OF GENERAL INTEREST.

DELIVERED BEFORE THE BRADFORD MEDICO-CHIRURGICAL SOCIETY, OCTOBER, 1911.

BY SAMUEL LODGE, M.D.,

SURGEON TO THE EYE, EAR, AND THROAT DEPARTMENT OF THE ROYAL HALIFAX INFIRMARY; PRESIDENT OF THE SOCIETY.

I PROPOSE in this address to describe some conditions illustrating most widely the diagnosis and treatment of some intracranial diseases which arise independently of local suppuration in the ear, the accessory cavities of the nose, and in the orbit. The cases include examples of intracranial tumour, hydrocephalus, disease of the pituitary body, and others of equally general interest.

Herrick has very truly said that "typhoid fever is not only an imitator of disease, but many diseases imitate typhoid fever." This is illustrated by the following case:

CASE I.—*Extradural Abscess over Both Frontal Lobes, of Traumatic Origin: Pseudo-Typhoid Symptoms: Pott's Puffy Tumour over Right Frontal Region: Operation—Cerebral Symptoms Relieved: Death from Chest Complications.*

A quarryman, aged 21 years, was admitted to the Halifax Fever Hospital on August 15th, 1911, under Dr. Neech. The duration of illness prior to admission was ten days. On admission the temperature was 105.4°, the pulse 92, and respirations 24. Next day the highest temperature was 107.4°, and highest pulse-rate 96. On the third day the highest temperature was 106°, and the highest pulse-rate 84. On the fourth day, on which he was transferred to the Royal Halifax Infirmary, the highest temperature was 99.2°, and the highest pulse-rate 68. Up to the time of his death the evening temperature rarely exceeded 103°, when the morning remissions usually exceeded 2°. During the day the patient lay in a typhoid state, but at night frequently rose from his bed and attempted to leave the ward. He constantly threw off the bedclothes, and complained of there being a bird's nest on the next bed; hypodermics of hyoscin and morphine were required every evening. Splenic enlargement and rose spots were never present. Diarrhoea of "pea-soup stools" was a prominent feature. Incontinence of urine and faeces. On two occasions Widal's reaction proved negative. Until the last week there were no chest symptoms. About the second week after admission to the Royal Halifax Infirmary a fluctuating swelling over the right frontal eminence was incised and pus was evacuated.

Towards the end of the third week the swelling reappeared. Rigidity of the neck muscles, retraction of the head, and Kernig's sign were more pronounced. There was conjugate deviation of the head and eyes to the left and optic neuritis was well marked in both eyes. Some inco-ordination of the arms (dysdiadocokinesia) was present. The right knee-jerk was brisker than the left. Plantar reflexes were flexor in type, and the abdominal reflexes present. Incontinence of urine and faeces. No sensory or motor changes. A history of falling against a fender and bruising the right frontal region, and of suffering from headaches all the summer was now elicited for the first time.

Operation.

On September 5th a scalp-flap, including the pericranium, was reflected with its convexity upward, its centre coinciding with the old incision for the evacuation of the subpericranial abscess. A portion of the frontal bone, oval in shape and about $\frac{3}{4}$ in. long in its largest diameter, was slightly greenish in colour, and presented a narrow but definite fissured fracture of about $\frac{1}{2}$ in. in length. On chiselling away the outer table of the bone in this situation pus escaped from the diploë. The bony opening was enlarged to the extent of 2 square inches. As the pus welled out the pulse and respiration improved. The dura mater was found to be separated from the frontal bone and covered by granulation tissue over a wide area. The pus appeared to be confined in the extradural space. Some of the pus was preserved for bacteriological examination, and was reported on as follows: In films a few diplococci (possibly pneumococci) are found. Culture on agar at 37° C. for forty-eight hours has yielded no growth.

After evacuation of the extradural abscess the typhoid state passed off, the patient no longer required hyoscin and morphine, and now answered questions readily. He became constipated. Towards the end of the fourth week my colleague, Dr. Whitaker, detected serious chest complications, from which the patient died.

Post-mortem Examination.

The bony margins of the skull and the subjacent dura mater disclosed healthy granulating surfaces. On opening the dura the frontal lobes were seen to present saucer-like depressions on their superior surfaces. About the Pacchionian bodies there was inflammatory thickening of the pia mater. Both lungs

were collapsed, and each pleural cavity contained about a pint of opalescent fluid; there were numerous adhesions to the posterior walls and to the diaphragm. The pericardium and heart were healthy; the right lung presented areas of lobular consolidation at the posterior base, where an abscess was found. From this about 1 oz. of pus escaped. The left lung presented much discrete lobular consolidation. The abdominal organs were healthy.

CASE II.—*Tic Douloureux: Extirpation of the Sensory Root of the Gasserian Ganglion: Complete Recovery.*

A single woman, aged 40, had complained of "shooting pains" over the left side of her face for ten years. During the first few years they would occur perhaps about every three weeks. Latterly any movements of the face or jaws would bring on the neuralgia, which was associated with histrionic spasm.

Operation.

On September 26th, 1910, a flap was raised, the dura exposed, and the middle meningeal artery ligated. The second stage was performed on October 1st. Cushing's directions were followed in approaching the ganglion, and Spiller's suggestions for its physiological extirpation acted upon.

After-History.

When shown before this society last November there was a trophic ulcer of the left cornea; consequently, a few days later the anaesthetic lids were stitched together; they were reopened about a month ago. There had been an entire absence of pain since the operation. The cornea is clear and the sight good.

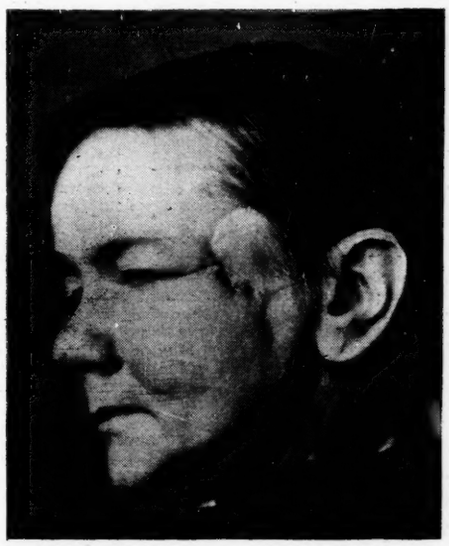


Fig. 1.—Case II. Tic douloureux. Physiological extirpation of the Gasserian ganglion. Showing site of flap incision for Spiller-Frazier operation; and the blepharorrhaphy of the left eye for trophic ulceration of the cornea.

The patient cannot, however, open her mouth widely, and the anaesthetic condition of the left half of her mouth interferes to some extent with mastication.

CASE III.—*Congenital Hydrocephalus: Drainage of Both Lateral Ventricles: Recovery.*

A boy, aged 2¾ years, suffering from congenital hydrocephalus, was unable to walk, talk, or remember anything.

On February 11th, 1910, the right lateral ventricle was opened at a point corresponding with the posterior end of the temporal line—Keen's site of election. A small roll of Cargile tissue was placed in the track of the opening in the ventricular wall. Three months later the left ventricle was drained into the subdural space in the same manner. The boy now talks well, and walks very fairly, and his memory is said to be very good for his age.

CASE IV.—*Internal Hydrocephalus Simulating Tumour of the Right Occipital Lobe: Drainage of the Lateral Ventricle: Recovery.*

A girl, aged 16¾ years, suffering from the general symptoms of cerebral tumour, was operated upon in November, 1908. The chief localizing symptom was left homonymous hemianopsia.

On exposure of the right occipital lobe the cortex ruptured spontaneously, leaving an aperture as large as a sixpenny piece in the posterior horn of the lateral ventricle. The dural flap was left open, and the bone of the osteoplastic flap was removed. It was hoped that this procedure would suffice for efficient drainage of the internal hydrocephalus.

This operation afforded great relief, and a month later the patient was shown at a meeting of the society, where Cushing's method of retroperitoneal drainage by a combined laparotomy and laminectomy was suggested as a suitable supplement to the operation in the event of a relapse, always provided that the patency of the foramen of Magendie had been previously demonstrated.

In September, 1910, the patient's condition was most gratifying. Her mental and auditory powers were excellent; neither the staggering gait nor the ataxy in her arms remained, and in spite of the consecutive optic atrophy and the hemianopsia, the visual field of the right eye had considerably enlarged, and its vision had becoming decidedly keener. The decompressed cranial area was normal in appearance.

CASE V.—*Cranial Nerve Involvement suggesting Tumour at the Cerebello-pontine Angle: Operation: No Tumour Found: Partial Recovery.*

E. B., a woman aged 36, first seen in February, 1908. There was a clear history of syphilis. The infection took place fourteen years ago. For the last four months the left eye had squinted inwardly, and had been inflamed. Deafness of the left ear was noticed shortly afterwards. The eye and ear affections had been preceded by pains in the head and by vomiting attacks. The squint was due to paralysis of the sixth nerve; the inflamed eye to a trophic disturbance of the cornea consequent on a fifth nerve lesion. The ulcer was situated centrally, and soon yielded to treatment. Later on the eyeball was removed, for other reasons, an anaesthetic, of course, being unnecessary. There was loss of all forms of sensation over the area supplied by the fifth nerve. When she opened her mouth the jaw deviated to the left, and the action of the left temporal and masseter muscles was greatly impaired. The left chorda

Fig. 2.—Case V. After operation. A sterilized safety-pin has been pushed through the skin to demonstrate the analgesia still persisting. The paresis of the left side of the face is also well shown.

tympani nerve was involved, as was evidenced by loss of taste on the left side of the tongue in its anterior two-thirds. The muscles supplied by the left facial nerve were paralysed. The left auditory nerve and the glosso-pharyngeal were implicated, as shown by the facts that the aërial and bone conduction of sound were completely lost, and that there was loss of taste over the posterior third of the tongue, and diminished sensibility over the left side of the tongue, pharynx, and palate. The fundus of the left eye and the pupillary reflexes could not be examined on account of the corneal ulceration. The right eye was normal in every respect. The function of the olfactory nerves was impaired, more especially on the left side.

The patient's condition became much worse in the course of the next three months, in spite of vigorous antisyphilitic treatment. She showed signs of uncontrolled emotionalism. There was diminished appreciation of touch, pain, heat, and cold over the left side of the body. The stereognostic sense was exact. Motor paresis was present over the left side of the face and in the upper and lower limbs, which were ataxic. Before she became bed-ridden, Rombergism and staggering to the left had been a marked feature.

Reflexes: Left conjunctival, pharyngeal, and palatal were absent. Right plantar, flexor response; left plantar, extensor response. Right knee-jerk present, left knee-jerk absent. Organic reflexes, incontinence of urine and faeces.

Diagnosis.

Tumour of left cerebello-pontine angle.

Operation.

Left cerebellar fossa exposed. In order to inspect the cerebello-pontine angle it was necessary to remove the outer third of the lateral lobe of the cerebellum, as Frazier recommends. No pathological condition was detected.

After-History.

She is still an out-patient, and has been kept under the influence of antisyphilitic remedies more or less since the date of

her operation three years ago. There is no mental disturbance. Owing to the absence of the left eyeball it is impossible to test the function of the sixth nerve; that of the motor and sensory roots of the facial (nerve of Wrisberg), and that of the motor root of the fifth has greatly improved. She now hears a little; and, though there is still loss of the sense of taste on the posterior third of the tongue, the pharyngeal and palatal reflexes can now be elicited.

CASE VI.—*Tuberculoma of Cerebellum.*

A girl, aged 12, was admitted to the Royal Halifax Infirmary on January 7th, 1907, suffering from double optic neuritis and the cerebellar syndrome. Removal of a tuberculoma occupying a large area of the left lobe of the cerebellum completely relieved her of headaches and projectile vomiting. Later on she had a relapse, and was again relieved by the removal of a large tuberculoma of the right lobe. She retained her sight until her death, which took place six weeks later from tuberculous meningitis.

CASE VII.—*Cerebellar Tumour.*

The patient was a young man suffering from double mastoid disease and the cerebellar syndrome. Cerebellar abscess was diagnosed. At the operation, after trephining, a small dural opening was made, and a pus searcher used. The tumour was missed. The patient died. The photograph of the brain shows the tumour *in situ*.

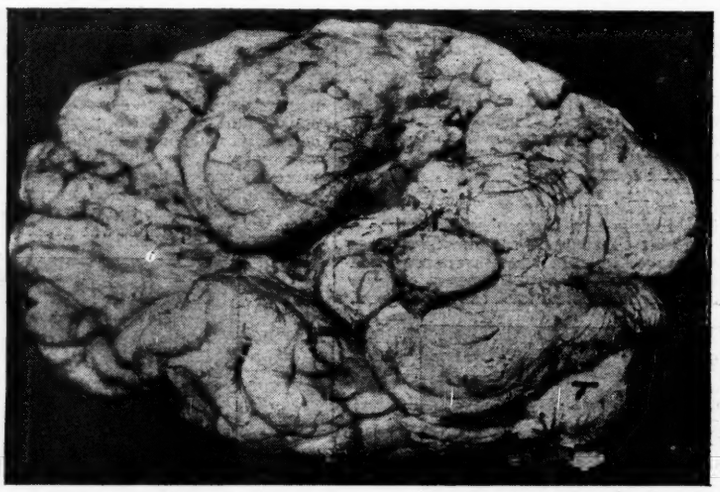


Fig. 3.—Case VII. The tumour is seen where the cortex of the right lobe of the cerebellum has been removed at the autopsy. The tumour is indicated by a T.

This case demonstrates the importance of using a knife instead of a pus searcher, and of making a large dural flap under similar circumstances. The searcher had penetrated the tumour.

CASE VIII.—*Tumour of the Fourth Ventricle.*

A man, aged 25, was seen in consultation with Dr. Cunliffe, who has very kindly permitted me to furnish this report.

The patient's father and his paternal aunt had been epileptics, the former a heavy drinker. His mother has had twenty children, of whom only eight are living. The patient himself, though a small child when born, was not premature, and appeared to be normally intelligent until, when 4 years old, he went to school. He never attained the second standard. At 10 he became a "half timer" at the mill, and at 13 was apprenticed as a picket maker. During his apprenticeship headaches occurred frequently, and he would often lie in bed without food or drink for periods, broken at intervals of two or three days, when he would get up in a dazed condition and appease a ravenous appetite before returning to bed. Gradually growing worse, at the age of 21 he was discharged for inefficiency. Finally, becoming quite uncontrollable and filthy in his habits, he was sent to Clayton Workhouse, and on October 1st, 1911, was admitted to the hospital. There he was dull mentally, had often to be roused to eat, and would never willingly leave his bed. At first he would take liquid food, and, with a little persuasion, solids; but dysphagia, a marked feature of his illness, continually increased, and towards the end he could be induced to take liquids only with difficulty. He had never vomited; for several months before death there was glycosuria and incontinence of urine and faeces.

The patient, who was very emaciated, had a pulse-rate never below 78, and a subnormal temperature. When asked a question, he would repeat it, and show some hesitancy in answering it. The head was held rigidly fixed by the tense cervical muscles; there was conjugate deviation of the head and eyes to the left, coarse nystagmoid movements on looking to the right, double optic neuritis with pupils equal in size but without reflexes. The facial sensations and muscular actions were normal, palate and tongue movements natural. The stereognostic sense of the hands was good, and the arms were ataxic. His gait had been ataxic, with a tendency to fall forward. The sensibility to touch, pain, and temperature was absent below the level of the fifth lumbar vertebra; there was a marked kyphosis of the spine over the lower cervical and upper dorsal region, and a bedsore over the sacrum. The legs were paralysed and rigid, the plantar reflexes extensor in type, the knee-jerks absent.

The question of a decompression operation in the suboccipital region was raised, only to be rejected owing to the grave condition of the patient and the probable existence of multiple lesions.

Necropsy.

On making a partial *post-mortem* examination, we began by exposing the spinal cord from the second cervical to the fourth dorsal spine: the dura mater appeared distended; the arachnoid though oedematous was of usual translucency, the pia mater and cord healthy. When the brain was removed both the anterior and posterior subarachnoid cisterns were greatly distended with clear fluid. Through the tense transparent wall of the posterior cistern we saw a chocolate-coloured tumour. The tumour, of the consistence of a well-set jelly, separated the floor of the dilated fourth ventricle from its roof; it protruded into the Sylvian aqueduct and extended backwards 45 mm. into the posterior cistern. The largest vertical measurement was 25 mm. The microscopical report showed the tumour to be a papilloma. The brain showed some flattening of its convolutions (probably the result of the internal hydrocephalus set up by the tumour).

Fig. 4.—Case VIII. Papilloma of the fourth ventricle. The letter T indicates the tumour. The specimen was unfortunately compressed in the process of hardening.

The absence of vomiting is remarkable, but not exceptional. The presence of glycosuria is said to be more frequent in cysticercus infection than in tumour. We regret that we did not examine the whole of the spinal cord, as Dr. Grainger Stewart has published a case in which papilloma of the fourth ventricle was associated with secondary growths in the subarachnoid space of the spinal cord.

Drs. Taylor and Collier have shown that in compression myelitis, headache and vomiting may be singly or together associated with optic neuritis in cases where pathological examination has not revealed any intracranial disease.

The remaining cases illustrate some diseases of the pituitary body.

Monsarrat, quoting Cushing, says: "Two conditions, one due to a pathologically increased activity of the pars anterior of the hypophysis (hyperpituitarism), the other to a diminished activity of the same epithelial structure (hypopituitarism), seemed capable of clinical differentiation. The former expresses itself chiefly as a process of overgrowth—gigantism when originating in youth, acromegaly when originating in adult life. The latter (hypopituitarism) expresses itself chiefly as an excessive, often a rapid, deposition of fat, with persistence of infantile sexual characteristics when the process dates from youth,

and a tendency towards a loss of the acquired signs of adolescence when it first appears in adult life. Experimental observations show not only that the anterior lobe is a structure of such importance that a condition of apituitarism is incompatible with the long maintenance of life, but also that its partial removal leads to symptoms comparable with those which we regard as characteristic of lessened secretion in man.

"A tumour of the gland itself, one arising in its neighbourhood and implicating the gland by pressure, is naturally the lesion to which one or the other of these conditions has heretofore been attributed, though it is probable that over-secretion from simple hypertrophy or under-secretion from atrophy, will be found to occur irrespective of tumour growth when examination of the pituitary body becomes a routine measure in the *post-mortem* examination of all cases in which the conditions suggest one or the other of the symptom-complex described. When due to tumour surgery is the treatment that these conditions demand, and at present there are reasonably satisfactory ways of approaching the gland; but clinicians and surgeons must clearly distinguish between the local manifestations of the neoplasm due to involvement of structures in its neighbourhood other than the hypophysis, and those of a general character from disturbance of metabolism due to alterations of the hypophysis itself."

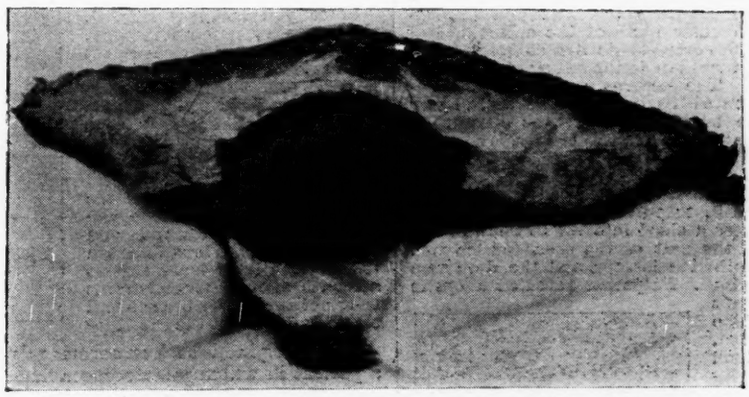


Fig. 5.—Case VIII. Coronal section through the fourth ventricle; the tumour and the ventricular ependyma are pigmented. During the process of hardening the specimen was greatly compressed unintentionally.

HYPERPITUITARISM.

I will now refer to 5 cases of hyperpituitarism.

CASE IX.

The first patient was a married lady aged 43, who consulted me in June, 1907. For the previous fifteen months there had been gradual failure of sight and pain in both temples. Dr. Halliday, whose patient she was, informed me that during her present illness she had recovered from a ptosis of one eye.

She could detect movement of the hand at half a metre's distance with the right eye, and count fingers at a distance of 6 metres with the left. There was bitemporal hemianopsia and primary optic atrophy. As far as I am able to recollect the degree of acromegaly was not very pronounced. About a month later a cystic tumour of the hypophysis was operated upon by the temporal route. Through the courtesy of the surgeon in charge I was present much enlarged. The loss of density in the cranial bones probably accounted for the unusual clearness of the sella turcica, shown in the radiogram of this patient's skull.

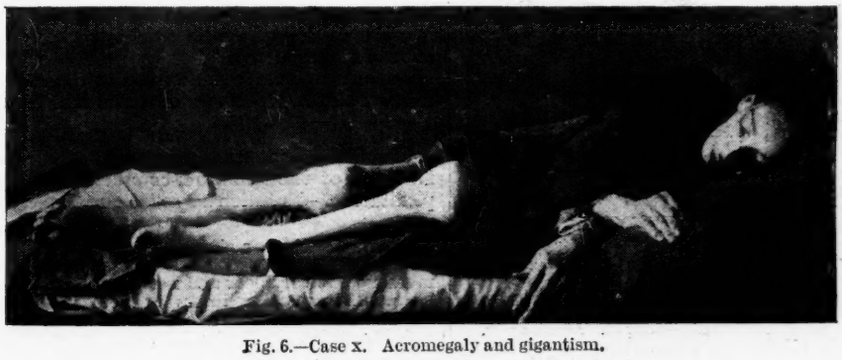


Fig. 6.—Case X. Acromegaly and gigantism.

In the four subsequent cases the patient's blindness was imminent, and the acromegalic syndrome ingravescent.

CASE X.

The second patient was a middle-aged woman, seen in 1909, in consultation with my colleague, Dr. Wright, who permitted me to make a *post-mortem* examination, and has very kindly allowed me to refer to the case. The acromegalic syndrome had existed since 15 years of age, hence the degree of gigantism well shown in the photograph. She was over 7½ ft. in height. The bones of the skull showed a remarkable increase in size of the diploëtic cells, and the outer and the inner tables had lost their hard character, so much so that the squamous portion of the temporal when divided could be torn between the fingers. The mastoid cells, the accessory nasal sinuses, the turbinated bones, the septum nasi, the tongue, larynx and trachea, were all

CASE XI.

The third patient was a woman aged 38, who was admitted to the Royal Halifax Infirmary on January 10th, 1910, complaining of headache, loss of sight, thickness of speech, and increase in size of jaws, hands, and feet.

The family history was good and apparently had no bearing on the case. She had always regarded herself as a healthy woman up to nine years ago, when menstruation ceased and she thought she was pregnant, but she has not menstruated since. For twelve months she had noticed that her eyesight was gradually becoming weak, and this was associated with headache. She dated her present illness from the onset of the failing eyesight, when she discovered she could not see people and things on either her right or left side without turning her head; she also noticed that the sight of the right eye was much worse than the left. During this time she had had "indigestion pains" across the abdomen, and feelings of numbness and tingling in the arms and legs. She had altered in her manner. from being a bright and active girl, she now felt tired, and does not wish to be disturbed. She had a peculiar, but indescribable, smell in the nose, and at times broke out into hot sweats, which grew cold, and were followed by shivering and the seeing of strange objects moving about the room. She had become much stouter, and her jaws, hands, and feet had increased in size. There was some difficulty in mastication, owing to the failure of the teeth to meet. The bowels were very constipated. There was no history of polyuria or glycosuria.

Physical Examination.

A very well nourished muscular woman, slightly anaemic, with dusky complexion. The head is large, the face massive and ovoid in shape; the supraorbital ridges and malar bones are prominent; the nose is broad; the lower jaw projects well forward. The lips are thick and unsightly; the teeth are large and separated by intervals; the tongue is bulky. The ears are big and the hair very coarse. The hands are large and slightly spade-shape; the fingers thick and the nails broad. The feet are similarly affected to the hands, and flat-foot is present. The thorax is barrel-shaped, the sternum and clavicles enlarged, and the characteristic sloping of the shoulders, with prominence of the upper spine, is present. The soft tissues of the whole body feel dense. The voice is low pitched and muffled, the mental cerebration laboured. The sense of smell is less acute on the right side. There is no perception of light in the right eye, the pupil is normal in size, and the consensual reflex is present. Visual acuity in the left is $\frac{6}{6}$. The pupillary reflexes are normal; perimetric examination shows temporal hemianopsia and concentric contraction of the visual field. The ocular movements of both eyes are normal, and the discs present the appearance of primary optic atrophy. The other cranial nerves are unaffected.

A lateral radiogram of the skull showed distinct enlargement of the sella turcica. The blood, urine, and cerebro-spinal fluid were normal.

Operation.

After narcosis, induced by chloroform, a laryngotomy tube was inserted; anaesthesia by ether and chloroform was subsequently maintained through the laryngotomy tube. A sponge was introduced into the pharynx, and a second one into the post-nasal space to prevent entrance of blood; both nares were plugged with cotton-wool soaked in 20 per cent. adrenalin solution.

An osteoplastic flap was made by a skin incision, commencing at the internal tarsal ligament of the left eye and carried in an arched manner over the bridge of the nose to the same ligament on the right side and downwards along the side of the nose, passing just below the anterior nasal spine of the superior maxilla, along the upper lip to the left ala nasi. By means of a bradawl a hole was bored through the right and left nasal processes of the superior maxillae, piercing the septum on its way. A Gigli saw was passed through these openings and the bony bridge of the nose sawn through in an upward direction. By means of Asch's forceps the septal cartilage was next separated from its attachment to the vomer and perpendicular plate of the ethmoid, and the osteoplastic flap completed and turned on to the left side of the face.

Fig. 7.—Case XI. Appearance of patient at 33 years of age, five years before operation

The osseous septum was separated from its upper and lower attachments by means of a nasal saw, and was totally removed. The anterior wall of the cavum sellae, now exposed, was perforated by means of Watson-Williams's sphenoidal sinus forceps. This opening was gradually enlarged by means of forceps, and the entire wall, together with the sphenoidal septum, was removed. After a short interval to allow of the cessation of haemorrhage, the seat of the sella turcica was removed by a chisel and nibbling forceps, and the dura was seen projecting into the sinus. Palpation revealed a cystic tumour of the hypophysis about 1 in. in diameter. The wall of the cyst was incised, and about 1 oz. of blood-stained serous fluid escaped; the interior of the cyst was explored digitally and with a curette, but no solid matter was removed. A drainage tube with gauze was inserted into the cyst cavity, passing through the right nostril, and the osteoplastic flap sutured in position. The plugs were removed from the post-nasal space and oro-pharynx, as was also the laryngotomy tube.

The whole proceedings had lasted one hour and a half, and the patient at the end of the operation was suffering markedly from shock, and although the usual methods to combat this condition were employed, she died nine hours later. Permission for *post-mortem* examination could not be obtained.

Fig. 8.—Case XI. Acromegaly.

CASE XII.

The fourth patient was a single woman, aged 53, admitted to the Royal Halifax Infirmary on September 12th, 1910. The acromegalic deformity is well depicted in the photograph, but it does not express the mental deterioration and the degree of general toxaemia which the hyperpituitarism had produced. She was fairly philosophical about her rapidly increasing blindness due to optic atrophy, and the "blinker sensation" due to the bitemporal hemianopsia, but she implored us to relieve the neuralgic pains in her head, which, she assured us, were unbearable. During the next few days she became more stuporose, and her appearance was cachectic.

Operation.

First Stage.—Free access to the cavum sellae was obtained by elevation of the nose, as suggested by Kanavel.

Second Stage.—Large pituitary cyst evacuated. Even after the first stage the stuporose condition increased very rapidly, and she died three days after the second operation, apparently from the pituitary cachexia of Tamburini.* An autopsy could not be obtained.

CASE XIII.

The fifth patient was a married lady, aged 27, who consulted me in July, 1910. She had suffered from frequent headaches, aching pains behind her eyes, and a sensation of wearing "blinkers" for three months. Face is slightly acromegalic. She thinks that her large hands and feet are a family peculiarity; this is not surprising as she is a member of a large family, all of whom are, like herself, tall and well built. Speech, smell, taste, and genito-urinary system unaffected. Knee jerks brisk. R.V. $\frac{6}{12}$, L.V. $\frac{6}{12}$. Both visual fields: Bitemporal hemianopsia and a large central scotoma for red and green. Both discs pale on the temporal side.

Fig. 9.—Case XII. The strong and thick hair and hirsute face of this patient contrast markedly with the thin and brittle hair of the subject of myxoedema.

A month ago her medical attendant, Dr. Skeels, kindly furnished me with the following report:

Since you last saw Mrs. O. she has very much improved. Her facial appearance is about the same, hands and feet a trifle larger. She expresses herself as "being very fit." Leads quite an active life and plays golf frequently. Her sharpness of vision is certainly much improved and her bitemporal hemianopsia has to a large extent cleared up. Menstruation ceased about the time you saw her and her breasts began to secrete milk copiously; about a month ago menstruation was re-established. Her breasts still secrete milk about the same.

Sternberg in his book on acromegaly quotes Fazio's case of a patient in whom galactorrhoea had existed for four years.

PROGNOSIS AND TREATMENT OF HYPERPITUITARISM.

1. Partial hypophysectomy is indicated in all acute cases of acromegaly. The number of successful operations is now considerable, and acromegaly is rarely, some authorities say never, caused by malignant growths.

2. In chronic cases of acromegaly, with considerable remissions and an absence of eye changes, the patients should be encouraged with the hope of a possible cessation of the disease (Sternberg); and symptomatic treatment should be adopted; and, should eye changes occur in the chronic form, Cushing's intermusculo-temporal method of decompression is indicated to avert the onset of blindness.

3. A decompression operation would be the correct procedure to adopt if the patient's disease had reached the cachectic stage.

COURSE OF HYPERPITUITARISM.

Acromegalic patients may live thirty years or more. Thanks to the labours of the pioneers in this branch of surgery we need no longer say, in the eloquent words of West, speaking of another disease, that "we come to the sick chamber day by day to be idle spectators of a sad ceremony, and leave it humbled by the consciousness of the narrow limits which circumscribe the resources of our art."

HYPOPITUITARISM.

The two subsequent cases are illustrative of some of the features of the symptom-complex associated with hypopituitarism—Fröhlich's syndrome.

CASE XIV.

The first patient, a single lady, aged 32, first consulted me on October 20th, 1902. Duration of symptoms, one year. Her memory was very poor and her speech not so good as it had been. She suffers at intervals from violent headaches, after which her sight is worse. She looks very stout; has gained 2 st. in weight. R.V. $\frac{6}{60}$; L.V. $\frac{6}{60}$. Visual fields: Bitemporal hemianopsia. Ophthalmoscopy: Primary optic atrophy. As she did not improve in spite of vigorous antisyphilitic treatment, a decompression operation was advised. I did not see her again until six years afterwards, when, though blind, she was mentally bright and free from headaches, though still very stout.

CASE XV.

The second patient was a single lady, aged 40, who in May, 1906, complained of failing sight of five months' duration; and a sensation as if she had "blinkers on"; that when reading she has to wait for the print to appear; and that severe headaches are of frequent occurrence. By turning her head she could see $\frac{6}{18}$ with the right eye, and $\frac{6}{60}$ with the left. Right disc, hyperaemic. Left disc, inner margins swollen. Both fields of vision, temporal hemianopsia. She cannot distinguish the difference "between a shallow step and a deep one," when walking. She is very thirsty, always very sleepy; and when the headaches are severe she feels dizzy and sickly. She never vomits. Amenorrhoea was noticed when the headaches began. She is getting very stout. A decompression operation

* Where the glandular elements have undergone atrophy or malignant degeneration.

was recommended. My advice was not complied with. Vigorous antisyphilitic treatment was adopted, and, no benefit accruing, was given up.

Four years afterwards I made the following notes as to her condition: Headaches were no longer constant, but the sight has always been worse after an attack. Her features are not acromegalic; her gloves are still of the same size; her boots a size larger. Is much stouter than she was; she looks bright. Amenorrhoea still present. Smell, taste, and hearing are normal.

R. V. $\frac{\text{2-3 metres}}{\text{Fingers}}$ (on the nasal side).

L.V. No perception of light.

R. Hemianopic pupillary reaction.

Ophthalmoscopy: Right and left discs—consecutive optic atrophy.

When seen a month ago, R.V. $\frac{\text{1 metre}}{\text{Fingers.}}$

Headaches no longer trouble her.

Prognosis and Treatment.

1. If there be only symptoms of hyposecretion, as in Madelung's case, in which the syndrome developed after a gunshot wound of the base of the skull involving the sella turcica, symptomatic treatment should be adopted and an encouraging prognosis given as to duration of life.

2. If the tumour syndrome be also present at least a decompression operation is indicated.

Before concluding this address I would strongly urge the advantages of a suboccipital decompression operation as a palliative measure in all diseases, irrespective of their etiology, in which such symptoms as headache, optic neuritis, and vomiting are aggressive features; though in less severe conditions—milder cases of Bright's disease for example—treatment by lumbar puncture might suffice. I believe, with others, that the dura mater, stretched like the sclerotica in glaucoma, is the predominating factor in the production of headache; and that the optic neuritis, and frequently the vomiting, is almost invariably due to an obstruction to the escape of cerebro-spinal fluid. This, again, is parallel to the locking of the filtration angle in glaucoma.

Time will not permit me to dilate upon the presence of optic atrophy in hyperpituitarism and that of optic neuritis in hypopituitarism, so I will conclude by thanking my colleagues of the Royal Halifax Infirmary for their valuable assistance on many occasions; and Dr. Pollard, our late Senior House-Surgeon, for much help in the collection of the material for this address; and Mr. Wrathall, of the same infirmary, for the photographs and radiograms. I am greatly indebted to Professor Hochenegg and to Dr. Exner for kindly adding details of some of Professor Hochenegg's unrecorded cases when sending me the reprint of Dr. Stumme's paper. Professor Halstead's paper on the Operative Treatment of Tumours of the Hypophysis has been of the greatest assistance to me, and no less so have been other brilliant communications of our American *confrères* on the Pathology and Surgical Treatment of Diseases of the Hypophysis.

BIBLIOGRAPHY.

Ballance, C. A.: *The Surgery of the Brain*, p. 293.

Butler, G. R. B.: *The Diagnostics of Internal Medicine*, quotation from Herrick, p. 665.

Cushing, H.: Articles in Keen's *Surgery*, 1908.

Exner, Dr. (Vienna): Personal communication, 1910.

Fazio, cited by Sternberg, p. 72.

Frazier, C.: Articles in Posey and Spiller on "The Eye and Nervous System," 1906.

Fröhlich, cited by Lewis, *Surgery, Gynaecology, and Obstetrics*, 1910.

Halstead, A. E.: Surgery of the Hypophysis, *Surgery, Gynaecology, and Obstetrics*, p. 494, 1910.

Hart and Barbour: *Manual of Gynaecology*, p. 239, quotation from West.

Herrick, cited by Butler, *Diagnostics of Internal Medicine*.

Hochenegg, J.: *Archiv f. klin. Chirurgie*, Bd. 87, Heft 2.

Horsley, Sir V.: BRITISH MEDICAL JOURNAL, 1886 and 1906.

Kanavel, cited by Halstead.

Keen, W. W.: *Surgery*, 1908.

Lewis, D. D.: The Surgery of the Hypophysis, *Surgery, Gynaecology, and Obstetrics*, September, 1910.

Lodge, P. G.: A Case Bearing Upon the Pathology of Acromegaly, BRITISH MEDICAL JOURNAL, i, p. 221.

Monsarrat, K. W.: Surgery of the Pituitary Body, *The Medical Annual*, 1910, p. 184.

Posey and Spiller: *The Eye and Nervous System*, 1906.

Sternberg, M.: *Acromegaly*, Dr. Atkinson's translation, 1899.

Stewart, Grainger: On Four Cases of Tumour of the Fourth Ventricle, *Trans. Royal Soc. Med.*, December, 1907.

Stewart, Purves: Sensory Root of the Facial Nerve, *The Diagnosis of Nervous Diseases*, p. 145.

Stumme, E.: *Archiv f. klin. Chirurgie*, Bd. 87, Heft 2.

Tamburini, cited by Lewis.

Taylor and Collier: Vide Williamson, "Optic Neuritis in Compression Myelitis."

Taylor and Collier, cited by Williamson.

West, cited by Hart and Barbour.

West of Baltimore, cited by Halstead.

Williamson, R. T.: *Diseases of the Spinal Cord*, p. 37.

A Fourth Report

ON

EXPERIENCES WITH SPINAL ANALGESIA IN REFERENCE TO 2,354 CASES.

BY ARTHUR E. BARKER, F.R.C.S.,

SURGEON TO UNIVERSITY COLLEGE HOSPITAL; AND CONSULTING SURGEON TO THE QUEEN ALEXANDRA MILITARY HOSPITAL, MILLBANK, S.W.

SOME years ago I published in this JOURNAL[1] all the cases, without exception, in which spinal analgesia had been employed in my own hospital work, with a view to a study of its merits or demerits. Every one was carefully noted by officers specially appointed for the purpose in tables recording all those points upon which information was then considered to be particularly needed. Since then the procedure has been adopted in a large number of cases, and more and more frequently by all the surgeons of our hospital, some more and some less. One of our junior anaesthetists, after due study and observance of the details which had been found needful, has lately qualified himself to undertake this branch of anaesthetics, and all our operators, who for one reason or another do not wish in any particular case to carry out the procedure themselves, can now have it well done for them. Every effort has been made to secure uniformity of method in following the principles and details suggested in the papers referred to, and in recording the cases. All this has resulted in the accumulation of a further series dealt with in precisely the same way. Taken with those already published from the same institution, they offer an opportunity for further study of the procedure. But besides, I am permitted to refer to the experiences of several surgical friends who have adopted the same principles and closely followed our ritual in large numbers of cases in their own hospitals, and have kept their records scrupulously on the same plan. Digests of these they have kindly furnished me with.

The figures to be now reviewed embrace the following: (1) Cases at University College Hospital, including my own first 300 and 475 since done by myself and Dr. Felix Rood, our Junior Anaesthetist, who has lately relieved me of a good deal of the labour in my own cases, and has used the procedure largely for our other surgeons as well. (2) Those of the Military Hospital at Millbank, at the hands first of Majors C. Spencer, J. H. Houghton, and O'Shea, R.A.M.C., and later of Major Pilcher, D.S.O. (3) Those at the Cambridge Hospital, Aldershot, done independently by Major J. H. Houghton. (4) Those at the Military Hospital, York, by Major C. Spencer himself. (5) The cases at the Dreadnought Hospital under the care of Mr. L. McGavin and his assistants. To all these gentlemen I owe the most cordial thanks for kindly supplying me with a digest of their tables and allowing me to make the present use of them; also to Dr. Rood for an abstract of our joint records. To Mr. McGavin I am particularly indebted. The figures he has kindly supplied to me are abstracted from a paper by him now in the hands of the editor of the *Practitioner* for early publication, for whose courtesy in sanctioning their present use I am very grateful. Mr. McGavin's paper is sure to be most interesting and valuable, giving many details of his cases as it will do, and also his independent opinions, though working on exactly the same lines. It embodies his own work and that done under his supervision by his assistants, Mr. O'Leary and Mr. Gwynn Williams, previously my own House-Surgeon before going to the Dreadnought Hospital, and now returned to us as Surgical Registrar.

Since August, 1908, I have not thought it desirable to publish my own further experiences in this field, for two reasons, though strongly urged to do so. In the first place, further relatively small series would prove nothing that is not already known. In the second, it seemed more to the point to give time for a number of serious *individual* workers to complete substantial groups of cases *dealt with on exactly the same lines*, which might be fairly combined into a large homogeneous collection from which conclusions could more safely be drawn as to mortality and other drawbacks than from each separately. Such a homogeneous record is now offered (for as much as it is

worth), for all those who have furnished their experiences have worked together, first, at our own hospital, and then independently, though on precisely the same plan and with the identical instruments and solutions at their own.

Moreover, all our collaborators have done their work in public institutions before colleagues, residents, students and visitors, subject to criticism—adverse and favourable—with every conceivable check on undue enthusiasm or carelessness.

Again, the series now combined are from the practice of surgeons who employ all kinds of anaesthetics, general, local, and spinal, and, in our own case, that most recent innovation, the intravenous ether narcosis, first devised by Professor Burkhardt, of Würzburg, and put in practice very successfully for us by Dr. Rood; and are, therefore, qualified to contrast them one with the other. I venture to think that all the questions as to the relative values of the different anaesthetics can only be safely threshed out in public hospitals dealing with large numbers of patients, in which competent observers *employ them all* under every form of scientific control and the wholesome check of publicity; and that the less we hear of private unchecked excursions into this domain, with statements about small numbers, not published, the better. In my own work, not one-third of my patients are operated on so far under spinal analgesia. In many, local and regional analgesia are employed, and in the rest one or other form of general anaesthesia.

The method employed for all these cases of spinal analgesia followed the general plan formulated by Professor Bier, its talented inventor, but modified in some, as I believe, important particulars.

The solution for injection was devised by myself at the outset under the conviction, supported by many experiments (see Reports I and II, BRITISH MEDICAL JOURNAL, 1907 and 1908), that the specific gravity of the fluid suspending the drug played an important part in its localization within the dural canal. This conviction is now shared by all who have worked with me, and is borne out by their own experience since. This injection fluid consists of stovaine 5 parts, glucose 5 parts, and distilled water 90 parts, all by weight. It is as nearly as possible isotonic with the blood, and has a specific gravity of 1023, as against that of the cerebro-spinal fluid, which is 1007. Injected slowly through the hollow cannula into the dural sac it remains, being heavy and slightly viscid, to a large extent unmixed with the cerebro-spinal fluid, and seeks in a thin stream the lowest level it can find, where it pools and continues for a long time undiffused, as proved by experiment. By adjusting the patient in the lateral position, with the head and shoulders well raised on a properly designed bolster, it is possible to bring this or that vertebra to the lowest part of the curve between the head and the pelvis, estimated from the horizontal. The nerve roots of the dependent side at the bottom of the curve will then be immersed in the heavy analgesic fluid as well as those caudal to them, over which the injected compound has run. If the patient continue to lie on the side without movement the roots on the upper side continue to be for a long time unaffected. This is proved by the fact that I have been able on a man preserving the lateral position to amputate the leg next the table without any pain, while sensation and motion remained intact (as tested by skilled observers) in the other uppermost limb. But if a patient injected in the lateral position be subsequently turned over on the back the heavy fluid finds its way between the *ligamenta denticulata* across to the opposite roots, and a double-sided anaesthesia results, which, however, remains to the end more profound and more extensive on the side which has been dependent while the injection was taking place. That this is not a complete "cut-off" of a segment of the cord itself (at all events at first), but only an effect upon the uncovered roots after they leave the cord, is evident from the above and from other observations.

When the injection is made in the sitting position the heavy compound runs into the sacral part of the dural sac and the analgesia is limited to the parts supplied by the sacral nerves, the lumbar plexus being usually unaffected, and we employ this position for perineal and anal operations. A fluid of less specific gravity than that of the cerebro-spinal (1007) would, of course, rise and possibly spread into the cranial cavity. This was proved long ago by Klapp in his experiment on dogs shown at the Congress of German Surgeons in Berlin, with cocaine dissolved in a light oil injected into the lumbar sac. At that time I saw one of these dogs quite happy and able to walk, but anaesthetic from the tip of his ears to the tip of his tail, only the sensory roots (the uppermost in this case) being affected by the light fluid, as it spread from the lumbar to the cervical region. It is curious that in Bier's clinic, where these experiments were done, it has since been denied that gravity can play a useful part in the procedure, as I and my friends believe has been proved by the experiments referred to in my second paper and in actual practice.

The average dose of stovaine in the cases now grouped was 5 centigrams—that is, 1 cubic centimetre of the 5 per cent. solution. Very rarely was this raised to 6 centigrams, often it was reduced to 4 or even 3. Abroad some very much larger doses of stovaine have been employed, up to 7.5 cg. and more, quite unnecessarily, and often with bad effects. In only one or two of our earliest cases were any of the adrenal derivatives or their synthetic equivalents made use of. I soon became confident that they are unnecessary, and that if they do produce ischaemia of the roots or cord, which is claimed, they are dangerous. Biberfeld's experiments on animals support this view. Even some surgeons abroad who formerly employed them in the belief that they prolonged the analgesia, which is very doubtful, appear now to regard them as useless, and probably injurious, in spinal, though of undoubted value in local analgesia.[2]

Except for perineal and rectal cases, the lateral position has been the rule, and great care was taken in regulating the curve of the spine, with the head raised on a small hard bolster made for the purpose of a definite height. In the case of men with broad shoulders and narrow pelvis, the latter was also raised from the horizontal table about 1 in. by means of a padded board. In women with narrow shoulders and broad hips this was not found to be necessary in most cases, but in all the head was carefully raised. Too much stress cannot be laid upon these points, and they are not so easily learnt.

In every case the same pattern of instruments was used, and they were *kept apart* for spinal analgesia *and for it alone*, and specially sterilized before and after use in each case. They were the 2 c.cm. "Record" syringe fitted with Bier's hollow needle which I have had made in hard, pure nickel. This metal is nearly as hard as mild steel, and does not corrode in boiling. It takes a good sharp point, and though it may bend with rough handling, is too tough to snap. My own fine nickel cannula open to its point and blunt to go through the lumen of the needle completes the outfit, which is stocked in metal boxes by Kröhne and Sesemann. The hollowed-out point of the injection needle must be always kept sharp, otherwise it will not penetrate the dura, which is not tense when the patient is lying down. The sharpening of the needle should be done on a smooth emery wheel of the diameter of 1 cm. This gives its opening the correct concavity and obliquity without making it too long. If the needle, moreover, is blunt, it may first press the posterior wall of the dural canal against the anterior, and then penetrate both walls at once as they rest upon the vertebrae. In such a case the injected fluid will only partially enter the dural canal or be discharged beyond it. This is almost certainly the cause of failure in some cases of which we hear. Another reason of ill success is that the oblique opening of the hollow injection needle may penetrate for half its length through the dura, causing only a crescentic puncture. Part of the lumen of the needle, especially if the point be too long, will then lie outside of the dura and part within, a small flap of dura half filling the opening in the needle. This can be well seen if one of these trocar needles be pushed so that only half its point penetrates a sheet of notepaper. If the needle has thus only half penetrated the dura the cerebro-spinal fluid may run out in drops, but if any liquid is injected it will impinge against the little flap and run out of that part of the needle opening outside the dura and not into the dural sac, failure being the result. For this reason when only a few drops of fluid escape by the needle it should always be turned round on its axis once or twice without pushing it further in. This will have the effect of turning the little flap aside and the slight pressure of the fluid within the canal will force the dura outwards on the needle until the

whole of its opening is within the canal. To further ensure the delivery of the fluid within the dural sac I have devised the little central cannula which is fitted on the nozzle of the syringe before the stovaine-glucose solution is sucked up through it from the ampoule. This is pushed through the lumen of the needle from which the cerebro-spinal fluid is flowing and when "home" its open end is exactly long enough to project just a millimetre beyond the hollow needle point. This will push the little flap aside and deliver the fluid beyond the point of the needle.* But though we employ this cannula, the hollow trocar needle should in all cases be turned on its axis after it has punctured the dura in order to turn the little flap aside, otherwise there is a danger of the cannula impinging on the flap and pushing the dura off the end of the needle and delivering the injection outside the canal. But with these precautions taken the failures to get the injection into the dural canal have been in our cases in the last few hundreds under 0.5 per cent. (vide Table). In my own first 50 cases before I had adopted them they were 6 per cent.

The syringe is filled from the ampoule through the slender cannula to the extent of circa 1½ c.cm. It is then turned point upwards, and all bubbles are driven out with the excess of fluid until only the exact dose (= 1 c.cm.) is left. There has evidently been an impression current that each ampoule holds exactly the required dose. This is absolutely wrong, and has, I know, led to dangerous overdoses. Each ampoule holds nearly double the required amount, to allow of loss in filling the syringe and subsequently dislodging of air bubbles. *The exact dose must always be measured in the syringe, and no other way.* The five divisions with which each cubic centimetre of this particular 2 c.cm. "Record" syringe is marked correspond each to 1 centigram of stovaine in our 5 per cent. solution of the drug, so that 1 c.cm. of the solution contains the average dose=5 centigrams.

In introducing the hollow needle the aim of the operator should be in every case to strike the dural sac *exactly in the middle line.* Moreover, the needle in entering the sac should always have its opening turned towards the patient's head. (This opening corresponds to a slot in the collar of the haft.) If the point enter in this way with its greatest breadth transverse to the cauda equina it will simply push aside any of its strands if they are touched at all. If entered with the opening turned to either side, the fine point might possibly penetrate a nerve bundle if this happened to be tense. But the chance of pricking a nerve floating loose in fluid is small indeed, and where it has occurred the strand has probably been touched not in the middle line of the sac but at its lateral aspect, where it is more or less anchored; moreover, the aperture of the needle has probably been turned sideways. Another reason why the opening of the needle should be directed upwards is that no loose nerve strand can be floated into it by the escaping cerebro-spinal fluid in that position and so block the outflow. Be this as it may, it is usually noticed that when the first few drops of fluid come away slowly the turning of the needle is followed by a rapid stream.

There is much to be said in favour of only using glucose-stovaine solutions which have been quite recently prepared. It is conceivable that even in a sterilized form in sealed Jena glass ampoules the compound may in time undergo some mutations or transformations rendering it more or less inert or even harmful.† With this possibility in view I have long avoided keeping any large numbers of filled ampoules in stock, and have insisted on having the compound freshly made and stored in sealed Jena glass ampoules only in such numbers as will ensure their being used up in a couple of weeks or so. In hospital where they are in daily use this is easy, for they are prepared every week or so by our pharmaceutist. But, as a matter of fact, any one can obtain by post from him for private work a few freshly prepared at a trifle over cost price.

Working with these fresh preparations we have obtained more constant, safe, and in every way more satisfactory results than formerly when filled ampoules were obtained in large numbers from other sources and stocked for long periods.

The method which I devised a couple of years ago for preparing the stovaine-glucose solution with accuracy as to strength and transferring it sterile into sterilized Jena glass ampoules has since been carried out for our use by Mr. R. Bennett, the pharmaceutist to the hospital, and has proved simple, speedy, and satisfactory. All that is required is an accurate balance, pure drugs, fresh distilled water, and two small Jena glass beakers 2¼ in. in diameter, which, when about half full, hold 100 c.cm. The oblong Jena glass ampoules (2 c.cm.) are made and stocked by the firm Ulbrich of Jena, and cost only 2s. 6d. per 100.

If two dozen, say, are to be charged at one time they are put in one of the Jena glass beakers with *distilled* water, their open ends down, their sealed ends upwards, and are boiled for a quarter of an hour, the beaker being placed in a special boiler made on my own design by Kröhne and Sesemann. This is then allowed to cool, when the ampoules will be found full of water. In the meanwhile 45 grams of distilled water are weighed into another similar beaker and 2.5 grams of Merck's pure glucose are added and boiled for ten minutes, and then cooled to the original temperature (15° C.) and again weighed. The weight lost by ebullition is replaced by boiled distilled water. Then the stovaine (2.5 grams) is added and the beaker is placed in the central hole of the sterilizer.

The ampoules are now picked up with sterile forceps and arranged with their open ends downward in holes in the plate which supports the beaker in which the solution has been prepared. The sterilizer should have an inch deep of distilled water at the bottom. It is now covered and boiled for ten minutes or a quarter of an hour. When the cover is removed the ampoules will be found empty, as the water within them is driven out of their unsealed lower ends by the boiling, and the solution of stovaine and glucose in the beaker will be at boiling point. The ampoules are then lifted with sterile forceps and quickly inserted into the solution in the beaker, open end downwards. The cover is again put on, and the sterilizer is kept boiling for a few minutes longer and then allowed to cool. When the cover is now removed the ampoules will be found to be full of the stovaine glucose solution, and their open ends are then sealed in a spirit lamp. If this simple procedure is accurately carried out the strength of the solution is secured with certainty, and the compound is transferred absolutely sterile into the ampoules automatically within the sterilizer. N.B. See that the sterilizer does not boil away all its water.

The principles and details of technique for carrying out spinal analgesia alluded to above are now well understood by those whose results are here grouped together for study. And we are all agreed that the more experience the administrator has accumulated the easier and more certain the procedure becomes for patient and operator and the less is heard of subsequent headache and sickness. When a patient has had two or three attempts at puncturing instead of one and has, to use a common phrase, "been fussed," he or she, especially if neurotic, is likely to have some headache a day or two after operation, more rarely after an interval of some days. Those who have had only the necessary preparation and have been quietly and skilfully dealt with probably will not. And the same may be said of sickness and nausea. Another important factor in their after-comfort is gentle lifting off the operating table without jolting or disturbing the level of the spine and its relation to the head. Too much stress cannot be laid upon this point. At all events, unpleasant sequelae are less and less seen as we gain in experience and that confidence which here as elsewhere communicates itself to our patients. When placed quietly in bed the patient's head and shoulders are slightly raised for the first day. In a few cases the drugs used in the same way were tropacocaine and novocain, but they appeared to offer no advantages over stovaine, and were given up.

That spinal analgesia is not suitable for every part of the body is admitted by all who have used it most freely. And this notwithstanding the work of Professor Jonnesco, who claims that he can operate on any part with its aid. From the experience of the 2,354 cases recorded here it

*I have lately seen one of these little cannulae, purporting to be mine, made with a closed end and a lateral opening short of the point which could only discharge the solution outside the dura in many cases. It was hopelessly wrong; it should be open to its end.

† This paper had been long written and ready for press when I saw in Mr. Owen Richards's admirable paper that "a number of insufficient anaesthesias were certainly due to decomposition of the solutions" used in his series of cases, for which changes he gives very satisfactory reasons.

seems to be suitable in practised hands for most conditions seated below the diaphragm, and to them to offer many marked advantages, both for patient and surgeon during and after operation, especially complete muscular relaxation and quietude. Personally, from what has been seen, I am inclined to except from its use cases of extreme asthenia due to carcinoma, and of advanced toxaemia depending upon septic peritonitis or obstruction, especially in later life. (In all cases of obstruction the stomach should, of course, be washed out and emptied before operation.) With experienced administration general anaesthetics probably do not involve at any rate more *immediate* risks for the patient, though perhaps they are followed subsequently by greater dangers from their after-effects on internal organs already damaged by toxaemia. But this is not the universal opinion abroad among those of large experience. Indeed, some say that they regard the conditions referred to as peculiarly claiming the spinal procedure. One thing is clear at all events, that is, that these conditions of extreme toxaemia and asthenia are intrinsically very dangerous under any form of anaesthesia, and will always add to the mortality of any particular procedure employed, be it general, spinal, or other.

It is clear that a much more extended study based upon homogeneous records is demanded, and to that end this present limited contribution, which has at least the merit of uniformity of procedure and principle, is now offered. The whole question for or against spinal analgesia requires to be treated, in my opinion, in a non-polemical way. It is not ripe for any other treatment. It has gone far enough to justify an extended trial by those, and only those, qualified to test its possibilities after painstaking study, but its place in our surgical armamentarium is as yet by no means fully and finally established. We may look forward in the wonderful evolution of synthetic chemistry to the discovery of some new drug which shall act on the naked nerve roots without producing any unpleasant general effects. So far no drug has been found to be free from risk, however introduced into the system. But if those more recently discovered have shown a great advance in this respect over cocaine we are justified in hoping that our present agents may be replaced by others less open to objection, and that our methods of employing them may be improved. It is obvious that the whole subject of anaesthetics is still in a state of evolutional flux in spite of many decades of most conscientious research, and no one can foretell its ultimate position. One thing is clear: that is, that chloroform and ether—those magnificent gifts to humanity—are having their former paramount position, as hitherto employed, challenged on all sides. They have been replaced to the extent of at least 20 per cent. of all operations by the perfectly innocuous local infiltration analgesia of Schleich and Braun applied to nerve endings. This again has led on to the equally harmless and often more convenient application of drugs by injection into and around nerve trunks in regional analgesia, and this by a process of natural evolution to the application of the same drugs to the naked nerve roots further back within the dural sac by Bier's ingenious, if not wholly innocuous, method of spinal analgesia. Moreover, the inhalation methods of administering volatile anaesthetics are on their trial, and infusion of various anaesthetics through the veins is challenging their place with more or less encouraging results. Their supremacy is also being invaded by the *general* narcotics introduced hypodermically, such as scopolamine and morphine. The number of anaesthetic drugs is increasing rapidly almost every day, and the most diverse modes of employing them alone or combined are being devised. Who shall say what direction all this strenuous effort will ultimately take? For an end to it let us hope, in the interests of patient and surgeon, there will never be. Those of us who have upon us the heavy responsibility of many surgical operations will do well to encourage this praiseworthy endeavour by all means in our power, lending what experience we may have to elucidate the many points in a very complex problem which still remain dubious.

Of Braun's modifications of Schleich's local infiltration and regional analgesia I will only say here that they are certain to be more and more widely employed as years pass. My own experience of these methods for more than twelve years has steadily increased my confidence in them, and, I am glad to say, this confidence has communicated itself to many assistants, so that we now have numbers of the younger men quite familiar with their principles and details, and practised in their uses. Spinal analgesia—which doubtless has its risks—may have to be restricted, but these harmless methods are certain to be extended even to some of the larger operations. If it is possible to make use of them for such serious conditions as thyroid tumours, many of which I have removed under local infiltration analgesia most comfortably for the patients and myself, it must be possible to extend the method very widely indeed. And this is being done in our hospital and in others too. Knowledge, practice, great care, and some skill are required to do the thing well, but these are worth acquiring at some expense of time and patience. The risks, immediate and remote, of some of our older forms of anaesthesia are well known, and can be avoided by employing local and regional analgesia, which are harmless in trained hands; surely, then, they ought on every principle to be avoided.

The first point to be noticed in regard to our combined figures refers naturally to mortality immediate or delayed. Of our 2,354 cases, 3 have died soon after the dural injection in a way to throw suspicion on the procedure. Two were in my own personal experience, and have been already reported in the BRITISH MEDICAL JOURNAL, August 22nd, 1908. Each was in a desperate condition to begin with, and occurred at a time when the limitations of spinal analgesia were far less understood than at present, and they suggested restrictions which have since been adopted. Neither would now be submitted to spinal analgesia, and very probably they would have succumbed under any form of anaesthesia. The first case was that of an old and very decrepit man, suffering from extensive carcinoma of the stomach and its lymphatic glands, and, as it turned out, with large secondary deposits in the liver besides. My exploratory operation, which involved a good deal of manipulation, was followed by severe shock, and he died soon after removal to the ward. The second was that of a middle-aged woman, with extreme distension of the intestines, and toxaemia from prolonged obstruction due to carcinoma of the sigmoid flexure. She died five hours after the completion of a short circuit, during which much handling and dragging of the intestines was necessary. In these two cases I believe the anaesthetic, at all events, contributed to the fatal issue. One other death took place soon after injection by Dr. Rood for one of our other surgeons. It was one of acute obstruction, with stercoraceous vomiting. Soon after analgesia was induced the patient vomited, and the larynx was flooded, producing fatal asphyxia. It is open to question whether this case should be included in our mortality figures at all. Except these, there are no deaths in the whole series of 2,354 cases which could be in any way put down to the spinal method of anaesthesia. It appears, then, that the only mishaps have occurred among the most serious abdominal operations. There have been none of those distressing cases familiar to all surgeons of any experience, in which the anaesthetic has been given for some comparatively trifling condition, and death has followed in no way connected with the ailment or even before any operation had been begun. But decrepitude, advanced carcinoma, and toxaemia from obstruction, alone or combined, will always be formidable factors to face with any kind of anaesthesia. Among the other abdominal operations, which amount to more than half of all, there have been no serious mishaps; and this, notwithstanding that there were many grave cases among them, such as gastro-enterostomies, perforated gastric ulcers, excision of large tracts of intestine, and quite a large number of acute cases of appendicitis, for which our method appears to be peculiarly suitable. But for the class of extremely bad cases referred to above, and especially for conditions high up in the abdomen, I have personally for the last couple of years avoided spinal analgesia. I have felt that it is easy to bring discredit upon a new procedure, possibly of great value, by forcing its use at the outset too far, and that if a sufferer has to face grave risks under an anaesthetic it is better for him, when a doubt exists as to which is best, to take the more or less well-known dangers of general inhalation anaesthesia. Otherwise the propor-

tion of abdominal cases to others has not fallen; it remains just over 50 per cent. The method is seen at its best when used for conditions below the umbilicus, especially in pelvic and perineal cases. For advanced strangulated hernia with great debility and prostration, especially in old people, I am still strongly of the opinion, expressed long ago, that local infiltration analgesias should be employed in preference to other forms of anaesthesia, and it is satisfactory to note that this view is more and more gaining ground in our hospital among those who are competent to induce local analgesia. It is peculiarly suited to such cases if correctly done, and, as it is without danger, it ought with them at least to be the rule, and the more dangerous methods of preventing pain should be abjured as a matter of course.

Of permanent nerve lesions we have seen nothing in our whole collection of cases, even when followed up for long periods.

Transient diplopia was complained of in three cases. In one it was so slight and fleeting that it could only be substantiated by our ophthalmic surgeon. The other two were somewhat more marked, but were soon quite well.

Faintness, or more rarely retching, on the operating table, and headache and vomiting in the wards, were noted in a considerable number of cases. These were mostly very transient. Many of the headaches were quite slight, and would not have been noted in the clinical records had not special inquiry been made. In a few cases they were severe—about 2.5 per cent. (*vide* table)—but never permanent. It is hard to express their frequency in exact figures; but headaches in all degrees from the slightest to the worst were noted in those long series accurately kept in about 20 per cent. Nausea or vomiting on the operating table was noticed in 10 per cent. and in the wards in 6.3 per cent. Subjective phenomena are proverbially difficult to test by any known standard. One man has a headache and says nothing about it, another has perhaps a very trifling one and makes as much of it as he can, though when not under direct observation it may appear to make but little difference in his enjoyment of life. I venture to think that in future records we ought to give up special inquiries on this point, and only ask generally "How are you?" only noting obviously severe and troublesome pains in the head or back.

In conclusion, it must be insisted again that none of these "Reports" are put forward in strong advocacy of the method, which I venture to think would be premature. They are nothing more than an attempt to elucidate a difficult subject seriously and dispassionately, and to furnish data for further inquiry, if such be considered desirable. My own attitude towards spinal analgesia now is very much the same as that of Professor Müller of Rostock, stated in a full debate on the subject at the congress of German surgeons, some 800 being present, in Berlin at Easter, 1910.[2] His view was that having employed it in over 2,000 cases he would be sorry to dispense with it; that it obviously had its defects probably owing to lack of uniformity of procedure. This last view is particularly my own. It appears to have been employed by too many in a somewhat haphazard manner; often as though the puncture was the only difficulty and the quality and the quantity of the drug and the position of the patient only a secondary consideration. For this reason I have only recorded the experiences of surgeons permeated by the same ideas and who have mutually agreed to record their cases on the same plan. It may be noted that Müller, like ourselves, has always used stovaine. It is also worth while adding that in the discussion referred to several of the ill-effects are attributed to the employment of the adrenal compounds so widely popular as an adjunct in these cases in Germany. It is incomprehensible to me why they are ever used at all in spinal analgesia, though, of course, they are invaluable in the local and regional method. It is doubtful if the effects of spinal analgesia are in any way prolonged by the addition of adrenal compounds. At any rate it is possible to operate on the abdomen for two hours in many cases without them.

POSTSCRIPT.

Since the above record was written, and while waiting for the last few cases to be added up to the end of 1911, a paper has appeared by Mr. Owen Richards in the BRITISH MEDICAL JOURNAL of December 23rd, 1911, invaluable for its straightforward analysis of 500 consecutive cases of spinal analgesia. These were done in one hospital in Cairo at the hands of many, apparently, not specially trained men, on different lines and with varying drugs and solutions. His experiences are, therefore, of special value and well worthy of study. My object in this report has had a different aim from his, as can be seen. It has been rather to show what results would be obtained were the

Table showing the Results at Five Hospitals working on exactly the same Principles and Technique, and with the same Instruments and Solutions carefully prepared. In the last Column the Cairo Results are given. Here the Principles, Technique, and Solutions were not always the same; some of the Solutions were decomposed.

	Barker at Univ. Coll. Hosp. Published B.M.J., Aug. 22, 1908.		Majors Spencer, Houghton, Shea, Pilcher, at Millbank Military Hosp.		Major Spencer later at York Military Hosp.		Major Houghton, later on, Gold Coast, and at Aldershot Military Hospital.		McGavin, Williams, O'Leary, at Dreadnought Seamen's Hospital.		Barker and Rood, Univ. Coll. Hosp., Aug., 1908, to Dec. 31, 1911.		Totals and Percentages of Our Combined Tables.		Richards, at Cairo, Egypt, B.M.J., Dec. 23, 1911.	
Abdominal operations..	148		189		26		140		418		267		1,188		185	
Other operations ...	152		196		24		160		426		208		1,166		315	
Total	300		385		50		300		844		475		2,354		500	
Failure to enter dural sac...	5	1.6	2	0.6	0		0		3	0.35	3	0.6	0.5		12	2.4
Injection with no analgesia following	6*	2.0	Not entered†		0		0		0		0		0.3		38	7.6
Injection with too short an analgesia	12	4.0			0		8		13	1.5	2	0.4	1.7		18	3.6
Chloroform used to complete the operation for all the above causes	23	7.6	17	4.4	2	4.0	8	2.6	34	4.28	16	3.3	4.2		68	13.6
Fatalities	2	0.6	0		0		0		0		1	0.2	0.1		3	0.6
After-Effects:																
Severe headache ...	Not sufficiently accurate		Not sufficiently accurate		2	4.0		1.3	5	0.59	19	4.0	2.5	§		16.0
Slight headache... ...					21	42.0		39.0	69	8,17	85	17.8	26.7			40.0
Nausea on table... ...					9	18.0		19.0	22	2.6	3	0.6	10.0			
Vomit in ward					6	12.0		10.0	7	0.8	12	2.5	6.0			?

* 4 in first 100; 2 in second 100, none since.

† As these two points are not entered in the Millbank tables, I have calculated the final percentages without the Millbank figures on the remaining 1,967.

‡ 21 were abdominal.

§ Calculated from the percentages given, excluding the first two earlier columns, which were not full enough.

mode of procedure, the drugs and solutions, the same in a long series of cases conducted by surgeons seeing eye to eye. Assuming, as we are bound to do, that his and all the other records involved have been kept in good faith and with equal care, they offer an opportunity for contrast which may be availed of without any wish to make too much of the differences between them.

On the question of the gross mortality or first risk from spinal analgesia, both series are not conclusive. Mr. Owen Richards has frankly recorded three deaths (0.6 per cent.) soon after the procedure. But when the nature of these cases is examined no fair critic could assert that the results were certainly and altogether due to the anaesthetic. The same might be said of my own two fatalities, and almost positively of Dr. Rood's. All were in a desperate condition to begin with. Still they are there, and every surgeon must form his own opinion as to whether they would have survived after any method of anaesthesia. All of them but the last occurred in the early days of a method whose limitations were as yet imperfectly known. In the work of our collaborators, which commenced later when some experience had been obtained and the plan of recording the cases was better developed, it will be seen that there were no fatalities, nor were there in our own after 1908 if we exclude the case of stercoral flooding of the larynx and suffocation in Dr. Rood's experience, as I think may safely be done.

In classifying the technical drawbacks to spinal analgesia as he found them (see table), Mr. Richards places inability to enter the dural canal first with 12 in 500 cases, or 2.4 per cent. The reasons given appear perfectly adequate —that is, faulty needles and wrong direction of puncture. He next mentions that in 38 cases (7.6 per cent.), after reaching the dura and obtaining a flow of cerebro-spinal fluid, the injection was followed by absolutely no effect. The explanation for this is, I suggest, sound and not far to seek (see above). Then there were 18 cases (3.6 per cent.) in which after injection the analgesia was so imperfect that chloroform had to be given. According, then, to his figures, the technical drawbacks to analgesia in his 500 cases, including the 12 failures to enter the dura, were 68, or 13.6 per cent.

In arranging our own collection of 2,354 cases in the same way (*vide* table), it will be seen that there were 13=0.5 per cent. failures to enter the dura in 2,354 cases, of which 3 belong to my own first 100 cases; there were 6=0.2 per cent. of absence of any analgesia on injection, of which 4 occurred in my own first 100 cases, 2 in the next 200, none since. Then there were 100 cases in which after injection the analgesia was insufficient for the completion of the operation=4.2 per cent. So that the technical drawbacks in our 2,354 cases which required the administration of a general anaesthetic (often only a drachm or two), and including failures to enter the dural sac, were in the gross 100=4.2 per cent. Of these, 14 occurred in my own first 50 cases.

The differences on all these points may be said to be small, but as far as they go they seem to support the view that a definite ritual with the same heavy solution, carried out by men who have worked first cordially together and then independently, is more likely to give uniform and better results than where there have been less uniformity of technique and different solutions, instruments, etc.

If any concrete proof of this were necessary, it is offered to us in the accompanying table, which shows Major Houghton's series to be the best of all those given, probably because he had more opportunity of studying the methods in the work of others before employing it himself. He was, with other officers of the Royal Army Medical Corps who followed him, appointed by the War Office specially to assist me at University College Hospital in recording these cases at a time when, in the second hundred, I had more or less got over the first difficulties and failures, and had devised the solutions since used. Then at the Military Hospital, Millbank, he assisted Major Spencer, who had also been much with us. Subsequently, on the Gold Coast and at Aldershot, he worked independently with accumulated experience, with the results shown in the table. It is interesting to note that on the Gold Coast he was obliged to make his own solution fresh, and fresh on account of the climate, and with the best results. Our own results since 1908, when we might be said to have passed the "tyro" stage, point to the same conclusion.

Mr. Richards's paper, if I may be allowed to say so, appears to me most useful and admirable. He does not yet, to be sure, endorse the opinion expressed above, and held by all those whose results are here tabulated—that the specific gravity of the compound injected plays an important part in the success of spinal analgesia; but perhaps that is to come. But he furnishes strong evidence of the necessity of freshly and carefully prepared solutions, for which I have long contended and provided.

REFERENCES.
[1] BRITISH MEDICAL JOURNAL, March, 1907; February, 1908; August, 1908. [2] Debate at Congress of German Surgeons held in Berlin, 1910.

SUBDURAL ABSCESS, THROMBOSIS OF THE LATERAL SINUS, AND DIFFUSE OSTEO-MYELITIS OF THE SKULL BONES TREATED WITH VACCINES: RECOVERY.

BY T. HARRISON BUTLER, M.D.OXON.,
HONORARY OPHTHALMIC SURGEON TO THE COVENTRY AND WARWICKSHIRE AND TO THE WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITALS.

THE following case, which was under my care while I had charge of the Aural Department of the Coventry Hospital, presents features of such unusual interest that I have no hesitation in recording it.

T. W., a male aged 25, came up on February 8th, 1909, complaining that he felt very ill, and had a severe headache. His condition was so serious that he was at once admitted.

History.

He has had a foul-smelling otorrhoea on the right side as long as he can remember, which he has completely neglected. Three days ago he vomited once. Violent earache and much headache came on at the same time. He has felt more ill every day, and "hardly knows how he got to the hospital." No history of rigors.

Present Condition.

The patient is obviously very ill; temperature 100°, pulse 100. He has otorrhoea on the right side, which is very offensive. The right meatus is full of pus and is blocked by polypi. There is tenderness at the tip of the mastoid, but none over the antrum or the emissary vein. The left ear shows no sign of present inflammation, but the drum is thickened and retracted from old chronic disease. The patient is moderately deaf in both ears. No tenderness in the neck over the course of either jugular vein.

In the absence of any very definite signs it was decided to watch the patient for a few hours before opening up the mastoid, but chloroform was given and all the polypi and granulation tissue was removed from the ear with snare and curette.

February 9th. The ear has ceased to discharge and is sweet. The patient vomited twice (9 and 9.30 p.m.). Temperature 100°, pulse 90. There are no signs of cerebral irritation; the patient is quite lucid in his mind; headache bad at intervals. No squint, pupils normal in size and reaction and equal in size. V.R. = ⅔ partly, V.L. = ⅔ all. There is no optic neuritis.

February 10th. The patient's temperature ran up to 104° in the night, with a rigor; vomited once. Headache better.

February 11th. There is a little stiffness in the muscles at the nape of the neck. Seems very ill indeed. Diagnosis made of subdural abscess, with possible thrombosis of the lateral sinus. Ear now sweet, no otorrhoea.

First Operation.

The radical mastoid operation was performed by Zaufel's method. The bone was so hard that two gouges were broken before the small, deeply-seated antrum was exposed. The tegmen of the antrum was found as a loose sequestrum blocking the aditus. The antrum and subdural space contained about two drachms of thick pus. The dura was freely exposed, the bridge cut down and the middle ear curetted. A meatal flap was turned back above and below, and a large rubber tube placed in the antrum and brought out by the retro-auricular incision. As pus had been found the lateral sinus was not exposed. The patient stood the operation, which lasted about an hour, well.

After-History.

The result of the operation was disappointing. The patient felt better, but his pulse-rate increased to 120, and his temperature became pyaemic in character, ranging from 97° to 103°. The headache ceased, but there was pain and tenderness about 2 in. behind the tip of the *left* mastoid and at times in the left posterior triangle of the neck. This tenderness on the opposite side introduced an element of doubt into the diagnosis. Was

the left lateral sinus thrombosed? If so, had the thrombus spread from the right side, or was it a primary condition? On February 14th and 16th there was a slight rigor, which strongly suggested sinus thrombosis. Antipneumococcus serum was injected on the 17th, and polyvalent staphylococcus serum on the 18th and 19th. The general symptoms of toxaemia were so slight that it was thought that the infection was most probably staphylococcal. As a matter of fact, an examination of the pus obtained from the lateral sinus showed that the causal micro-organisms were the *Staphylococcus pyogenes albus* and Hoffmann's bacillus or a similar micro-organism. These injections had no obvious effect. On the 19th there was slight twitching of the left side of the mouth and tenderness along the *left* jugular. An examination of the left ear showed no signs of any recent disease; no optic neuritis. It was decided to expose the right lateral sinus.

Second Operation.

Under chloroform no thickening of either jugular could be detected. Before the lateral sinus was exposed over ½-in. of sclerosed bone had to be cut away, and two more gouges were sacrificed. With the greatest difficulty (owing to the intense hardness of the bone) the sinus was exposed along about an inch of its course. It was full of fluid stinking pus. As there had been some twitching of the left side of the body, and the exposed dura was bulging, it was incised, but nothing escaped. This proceeding was, I think, an error, but no harm resulted. The pus was collected and a vaccine prepared by the Clinical Research Association. At the end of the operation the patient's condition was too precarious to allow ligature of the jugular to be carried out. The result was eminently satisfactory; the patient's condition rapidly improved, although his temperature did not fall much and his pulse remained rapid. The pulse became stronger and regular and he felt much better. His tongue rapidly became clean.

Five days later the vaccine arrived, and was at once used. An increasing dose was given daily, and each was followed by an evening rise of temperature. The following doses were injected: 25 millions, 50 millions, 75 millions, 100 millions, and 125 millions. After the fifth dose symptoms like those of serum disease appeared, skin rashes and joint pain, so the treatment was discontinued. On March 7th the temperature sank to normal. The mastoid wound was healing rapidly. It had been irrigated daily with boracic lotion and hydrogen peroxide and packed with iodoform gauze.

March 10th. The patient's temperature began to rise again, and he received an injection of 175 millions of vaccine.

March 16th. A swelling appeared over the inner aspect of the right tibia, which was red and tender. This did not go on to suppuration, but rapidly got well.

March 20th. The temperature is gradually falling to normal. There was a little diarrhoea with bloody stools. The wound has almost healed.

The patient now appeared likely to make a good recovery, but further complications soon appeared. The temperature became normal, the patient seemed perfectly well, but a swelling appeared over the left squamous part of the temporal bone. This eventually fluctuated, and the patient was anaesthetized and the scalp incised. Nearly the whole of the squamous portion was found loose as a sequestrum and was removed. The skull bones were necrosed all round and a probe could be passed down to the dura in every direction. The dura was exposed over an area of about one square inch and was bathed in pus. The patient, however, declared that he was perfectly well, and his temperature was normal. There were no signs of meningitis. No sooner had this wound healed than a fresh swelling appeared. It was incised, and again bare bone, riddled with holes and widely necrotic, was exposed. The process was repeated until hardly a square inch of his skull escaped. In all, he had *twenty operations*, and often had six or seven tubes in his head, draining pus. All the time he remained perfectly well. After a full year's treatment in hospital he was discharged hale and hearty, and returned to his work as a fitter at Worcester. Before doing so he was two months at a convalescent home, and the last time I saw him he looked the picture of health.

The question may be asked, Is this case an example of the triumph of vaccine therapy? It is at least extraordinary that a man with such extensive osteomyelitis of his skull should remain in perfect health, with no temperature, and no sign of any cerebral irritation. Mr. Leedham-Green, who saw the case, said he had never seen one like it, and I have never heard of one. In Tilley's book, *Diseases of the Nose and Throat*, a skull is figured on page 188 which gives some idea of the condition of my case, although fortunately his skull was not quite so bad.

THE department of public health in Queensland has commenced this year a campaign in Brisbane against mosquitos, the main object in view being the abolition of dengue fever and filarial disease. The co-operation of all householders is being sought by circulars and visits from officials from the public health department instructing them how to abolish breeding places on their premises and exclude adult mosquitos from their houses.

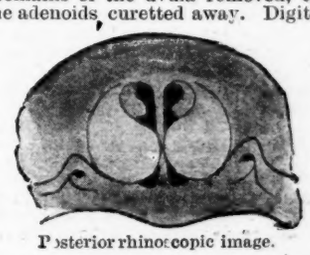
NASAL OBSTRUCTION DUE TO OSTEOMATA OF THE POSTERIOR NARES.

BY F. P. STURM, M.CH.,
LEIGH, LANCS.

OSTEOMATA of the nasal cavities are so infrequently met with that they constitute the rarest of all the varied causes of nasal obstruction. Cases have been reported by Stein, Ballenger, and Boenhaupt, but nothing definite is known as to the etiology of the condition. Iodides are stated to be of value in cases with a specific history (Ballenger). The following is the single instance of the condition with which I am personally acquainted.

A boy aged 11 was sent to me by Dr. M. J. Halton for operation on account of deafness and complete nasal obstruction. The septum and turbinates as viewed by anterior rhinoscopy were apparently normal. Both drumheads were retracted and immobile; tuning-fork tests revealed typical conductive deafness. The tonsils were enlarged; the naso-pharynx was packed with suppurating adenoid masses which occluded the Eustachian tubes and rendered it impossible to obtain a view of the posterior nares by means of the rhinoscopic mirror. A former operation by another surgeon, four years previously, had lacerated the soft palate, and torn the right half of the uvula completely away. There was no history of syphilis or tubercle.

Under a general anaesthetic the ragged edge of the palate was trimmed, the remains of the uvula removed, the tonsils enucleated, and the adenoids curetted away. Digital examination



Posterior rhinoscopic image.

then revealed a dense bony enlargement of the posterior end of each inferior turbinate. These growths completely occluded the upper respiratory passages, and all but met in the middle line behind the vomerine plate. Each was of the size of a cherry, and of such ivory denseness that neither spokeshave nor saw was able to make the slightest impression, though repeated attempts were made with both these instruments and with posterior nasal forceps. The result of the operation has been that the deafness has completely disappeared and the general health greatly improved, as would naturally follow the removal of suppurating adenoids and diseased tonsils, but the nasal obstruction remains, and will almost inevitably result in the recurrence of the adenoids.

If this case comes up for operation again, or in any similar case, one would be inclined to attempt the removal of the bony tumours by means of a long-bladed gouge or chisel introduced by way of the anterior nares. The accompanying illustration is a sketch of the posterior rhinoscopic image made two months after the operation.

NOTES ON ARTHRITIS.

BY
J. RUPERT COLLINS, M.A., M.D.(DUB.UNIV.),
PHYSICIAN TO CHELTENHAM GENERAL HOSPITAL.

THAT there is a very real difficulty in making a satisfactory classification of the various forms of arthritis is recognized by most writers on the subject, and in practice there is sometimes still greater difficulty in placing a particular case so as to conform to the academic connotation of any particular type. The difficulty suggests that the customary classification is an artificial one and does not correctly represent this form of disease. There is nothing strange in different micro-organisms causing very similar symptoms, and, in fact, *a priori*, it is more remarkable that these primitive vegetable organisms when planted in the body should evoke such dissimilar and characteristic symptoms in the host as many of them do. It is, then, not difficult to see that any classification based on symptoms or morbid anatomy must be a confused one. When the bacteriology of arthritis is more complete, it will be an easy matter to picture clearly the arthritic changes produced by infection in general, together with the peculiar phenomena associated with infection by certain bacteria in

particular. My own view is that the vast majority of all cases of arthritis are due to the action of a micro-organism, that different micro-organisms are capable of producing lesions which are clinically identical, and that, regarding the body as a tube, the infection is caused by an entry being effected through some part of the surface of the tube by a micro-organism not necessarily dissimilar to the ordinary bacterial flora of that region of the body.

Diathesis I do not ignore, but I interpret that term, prolific in faction, as meaning the constitutional proneness of an individual for a particular infection—in other words, his suitability as a culture medium for any particular micro-organism, and the importance of even slight differences in the constitution of culture media is fully appreciated by workers in bacteriology. It is impossible to do the smallest work in bacteriology without appreciating that the soil as well as the seed has to be reckoned with. An abnormal deficiency in bacteriotropic substances would also as a constitutional peculiarity be included under diathesis.

I will now refer to some cases illustrating the above views. Many of the patients have been shown at the clinical demonstrations held at the Cheltenham Hospital during the summer months.

CASE I.

On January 2nd, 1911, I was asked by Dr. Hebblethwaite to see with him a Mr. T., who gave the following history: He had been a robust man up to three and a half years ago, when he had an attack of appendicitis, for which he was operated on. At that operation an abscess had been found and drained, but it had been considered inadvisable to hunt for the appendix, which had accordingly been left behind. One month after the operation he had experienced some abdominal pain, for which he saw his surgeon, who did not consider it of importance, and the pain soon passed off. About six months after the operation he began to have pains in his joints, which became swollen and tender. The knees were first affected, then the fingers, wrists, and shoulders. During the next three years he suffered increasingly from arthritis. He received active medicinal treatment, and was also treated at two spas with waters, baths, and packs to the liver. In spite of this he grew no better, but rather the worse, and in January, 1909, he could with difficulty rise from his chair.

At the time of our examination his wrists and knees were so acutely tender that he dreaded shaking hands, or any jolt to his bed. His fingers showed well marked ulnar flexion. There was present definite tenderness in the right iliac fossa, and the lower part of the right rectus was kept contracted, there was also tenderness on the right side on rectal examination. Dr. Hebblethwaite and I agreed in the opinion that there was present an old appendix abscess, and that the joint affection was a septic arthritis. Two days later Mr. Arthur Cardew operated, and after much trouble in getting through old adhesions, he found a deeply buried abscess in the vicinity of the appendix. The abscess was drained and the appendix was removed. Cultures were made direct from the abscess immediately it was exposed, and growths of *Bacillus coli communis*, and of *Diplococcus pneumoniae* were obtained. A vaccine was made from each organism. After the first inoculation the wound, which had nearly closed up, became painful, and the temperature rose. The wound was reopened on January 21st, and pus was again evacuated. The wound was then kept from closing by gauze plugs until no local reaction was caused by the vaccines. The inoculations were continued by Dr. Hebblethwaite for six months, and the joints steadily improved. In September I had the pleasure of seeing him walking about Cleeve Hill, and his joints are now almost normal. He occasionally gets a twinge, however, to remind him of past events. In this case we were fortunate in obtaining an exceptionally trustworthy anamnesis owing to the patient being a very intellectual man, who had, for amusement, studied medicine so far as to be within one examination of obtaining the M.B. degree just before his illness began.

CASE II.

G. G., aged 30, a poulterer, was on December 31st, 1910, dressing turkeys, when he injured the middle finger of his left hand. The finger became septic and an abscess was opened at the Cheltenham Hospital by the house-surgeon. The finger cleared up in a few days, but two days later his left knee began to swell. This was followed on the next day by swelling of the right knee and both ankles. Later his wrists were involved, and as he did not improve under salicylates and looked ill, he was admitted to hospital on February 8th, 1911, under my care. A culture was taken from his blood, 50 c.cm. being run off from his median basilic vein direct into a flask containing 50 c.cm. of sterile broth. The flask was incubated and a growth of a staphylococcus was obtained, from which a vaccine was prepared. An inoculation of 100 million was followed by marked improvement, and after two inoculations the patient was well enough to be transferred as an out-patient. He was inoculated once a week, and by the end of March he felt so well that he ceased to attend, although told to do so for some time longer. He turned up again in the following September with the statement that the joints had kept well up to the previous week. He was again inoculated with the same vaccine and urged to continue attendance if he wished to escape permanent arthritis. As before he improved under inoculations of vaccine, which were increased to 500 million. On December 1st his joints were almost well, and he again ceased to attend. Since that time I have not seen him. He will very probably have a relapse.

CASE III.

C. L., aged 28, held an exceptionally fine record as an athlete in boxing, swimming, and football. He had enjoyed robust health until August, 1910, when he began to have a discharge from his left ear, attributed by him to the effects of long diving. In the same month he developed acute arthritis, and was admitted to the hospital in the town where he then resided as suffering from acute rheumatism. He was treated in hospital for seven and a half weeks. On his discharge from hospital he felt very weak and failed to recover his strength. In the following October Dr. Hebblethwaite asked me to see him, he having already diagnosed septic arthritis due to aural infection. The patient was weak and wasted, suffering with pains in his knees, ankles, shoulders, and wrists, with attacks of vomiting, giddiness, and headache, and a small purulent discharge from his left ear.

He was admitted to Cheltenham Hospital under me on October 28th, and I asked my colleague, Mr. Norman Pike, to take charge of the aural treatment. This he kindly did, and on three occasions he removed small polypi from the middle ear through a small perforation in the tympanum. Cultures were made from the aural discharge, and on November 28th he was given 400 million of an autogenous vaccine of *Staphylococcus pyogenes aureus*. This caused oedema in the external auditory meatus, and such acute pain in the ear as to require a hypodermic of morphine. There was also some oedema over the mastoid process. Smaller doses were given in future, and by December 9th the ear was quite free from all discharge, the joints had ceased to be painful, and the patient had increased in weight from 10 st. 7 lb. on admission to 11 st. 5 lb. He was transferred to the out-patient department on December 13th and continued to be inoculated with vaccines until February, 1911, when he was in sound health, weighed nearly 13 st., had no joint trouble, and enjoyed his strenuous labour at an engineering works.

The auditory improvement I am not concerned with, but the crippling produced by this local lesion and the improvement following its treatment was very striking.

CASE IV.

H. E. came to the out-patient department of the Cheltenham Hospital on August 7th, 1911, complaining of joint trouble from which she had suffered for the previous ten years. The fingers of the right hand were the first to be affected. Both wrists were firmly ankylosed, the fingers of the right hand were fixed in a position of flexion at the first interphalangeal joints, the left hand was very weak, but was less deformed; she complained of acute pain in these joints, and also in her right ankle. Both nostrils were noticeably patulous, and the inferior turbinals were atrophied. She admitted having had a nasal discharge for about twenty years. Both anterior nares yielded a pure culture of Friedländer's bacillus. A vaccine of this organism was made, and inoculations were given in doses increasing from 100 to 500 millions weekly, and no other treatment was given. The joint pains became remarkably less and then ceased, so that she was able to resume sufficient house work to earn her living. The deformity and ankylosis remains, and will, I fear, be permanent; but I intend to see if injections of fibrolysin will lessen the fibrous ankylosis which is present.

CASE V.

A man, X., was admitted to Cheltenham Hospital complaining of acute rheumatism. His knees were swollen, and he had pain in several other joints associated with profuse sweating and rise of temperature. On examination a purulent urethral discharge was found. The patient professed his astonishment at this discovery, and stoutly maintained that he was quite unconscious that he had any urethral disorder, and could not explain how such had occurred. The gonococcus was present, and with local treatment the arthritis subsided.

CASE VI.

At the same time there was present in the ward a policeman, W. B., with acute rheumatic fever and endocarditis. He had been treated outside by Dr. Hugh Powell with salicylates and also with quinine. On admission I tried pushing sodium salicylate to 300 grains a day, with twice that amount of sodium bicarbonate, without effecting any improvement. I then obtained from a culture from his blood the *Diplococcus rheumaticus*, and under a vaccine of this he made a good recovery both of his endocarditis and of his joints, and Dr. Hugh Powell tells me that he is in good health, and has not been absent from his duty as a policeman for ill health since his return to duty last summer.

In a case somewhat similar to that of X., I was consulted by a lady who developed a severe arthritis in one knee a few weeks after her marriage. She attributed it to sleeping in a damp bed during her honeymoon. A vaginal examination was refused, but I felt satisfied by the clinical symptoms that the blame might be more justly attributed to the *Micrococcus gonorrhoeae* than to the humidity of the bedclothes.

That gonorrhoeal arthritis may closely simulate rheumatic is well recognized, but it is important to remember

that the secondary infections of the urethra and vagina may also cause arthritis.

The case now to be described was a patient of Dr. Conder, and the only part I had in the case was the preparation of the vaccine employed.

CASE VII.

J. E., a man aged 65, had spent the last forty-five years of his life in India. For the past twenty-five years he had trouble in his right knee in the nature of attacks of acute pain and swelling. These attacks had become more frequent and more severe in the previous six months. He had at times also pains in the left knee, elbow, and wrist, and in the right shoulder, ankle, and great toe, but not recently. On April 29th, 1911, Dr. Conder found the right knee to contain fluid and to be 1½ in. larger in circumference than the other. With a syringe he removed 2 oz. of purulent fluid, the pus cells of which were almost entirely polymorphs. There were also present in the fluid cocci in pairs and short chains. A culture showed a good growth of a Gram-positive diplococcus noncapsulated. On May 4th another ounce of fluid was removed from the same joint and yielded the same organism. On May 2nd the patient's opsonic index to this coccus was 0.89; on the same day he was given 100 million of his autogenous vaccine. After this he felt better, and on May 14th his opsonic index was 1.59; as there had been no visible reaction in the joint he was given the same day 250 million of his vaccine. This proved too large a dose; the day following he felt seedy, his temperature rose to 100° F., and he experienced for the next five days the most acute pain in both shoulders, ankles, wrists, and right great toe. On May 19th his opsonic index was 0.78. On May 26th he was given 150 million of vaccine, and as this dose gave satisfactory results it was adhered to. He had injections about once a week until September. The knee and other joints quite cleared up, and he started touring on the Continent, but took with him some vaccine in order to have an inoculation once a month as a preventive of further attacks, which he has not since had.

Now, in the cases set out above I am quite aware that I am describing no new thing; similar cases of great interest are to be found in Mr. Howard Marsh's book on *Diseases of the Joints and Spine*, but they do not receive the general attention they deserve. I am firmly convinced that every case of "rheumatoid" arthritis is due to a microbic infection; and, though I do not say that at present the infection can always be found, I contend that the more closely early cases of so-called rheumatoid arthritis are investigated the larger will be found the proportion of those in which a definite infection can be traced. If no local site of infection can be detected, the blood ought to be cultured. Mr. Peter Daniel, on page 140 of his instructive book on *Arthritis*, published this year, expresses an opinion in agreement with the above:

> Schüller claims that his dumb-bell bacillus is the cause of the affection. The whole of my experience points strongly against a definite cause of this kind, and is in favour of a multiplicity of bacterial processes. Clinical investigation and treatment has led me to attribute most importance to genital infection as a cause of rheumatoid arthritis.

Cases such as described above, if treated with sodium salicylate, guaiacol carbonate, or hydrotherapy in all its branches, degenerate into the forms of joint deformity, which have for years been the subject of treatises on acute rheumatism, chronic rheumatism, rheumatoid arthritis, osteo-arthritis, arthritis deformans, etc. Unfortunately, the complete investigation of these patients demands much time and labour, and on that account the hospital patient is frequently more fortunately circumstanced than his more affluent neighbour. But if fortune is propitious and the labour is successful, the resulting satisfaction to both patient and doctor is by no means small.

DR. ALFRED HOLLIS, of Freshwater, Isle of Wight, was on February 19th presented with a testimonial from the inhabitants of the three neighbouring villages in which his work had lain—Freshwater, Yarmouth, and Totland Bay—accompanied by gifts of a silver coffee and tea set. The testimonial was read by Lord Tennyson, and Lady Tennyson was one of those who presented to Dr. Hollis, on behalf of the bodies they represented, the portions of the service contributed by them. An additional presentation has since been made by a local lodge of the Order of Foresters. Before the presentations were made Lord Tennyson said that no one had been asked to subscribe, the gifts being freewill offerings, and, like the testimonial, the outcome of the true, deep, and genuine affection in which Dr. Hollis was held. Dr. Hollis, who became L.S.A. in 1867, M.R.C.S. in 1868, M.B., C.M.Edin. in 1869, and M.D.Edin. in 1873, was at one time President of the Isle of Wight Branch of the Association.

BORACIC ACID POISONING.*

BY

J. HERBERT SANDERS, M.D., M.R.C.S., L.R.C.P.,

MEDICAL SUPERINTENDENT, MATILDA HOSPITAL, HONG KONG.

I HAVE ventured to bring these notes before you this evening because boric acid is in such general use with the profession that any case where toxic effects are produced must be of interest to us all. I have looked up the literature on this subject, and cannot find much recorded, hence it will, I think, be of additional interest.

In the BRITISH MEDICAL JOURNAL of 1901 I find a reference to 4 cases, 2 of which were fatal.

Rinehart records the two following cases of poisoning by boric acid:

(*a*) A man aged 38 years had posterior urethritis, and he was treated with a weak solution of $AgNO_3$ locally, and 5 grains of boric acid was given by the mouth every four hours. Two days later there followed extreme weakness, an erythematous rash with papules and vesicles on the backs of the hands, and a very weak pulse. These symptoms subsided on withdrawing the drug, but reappeared on resuming it. Rinehart says he thinks that it would have ended fatally had it not been detected early.

(*b*) A man aged 50 years had a suprapubic lithotomy performed, and the bladder was washed out with a saturated solution of boric acid; also 5 grains of boric acid was given by the mouth every four hours. Ten days later an erythematous rash appeared, which later scaled, and crusts formed on the rash. The skin thickened and became infiltrated as in eczema; weakness and albuminuria were prominent symptoms; feeble pulse.

Wood of Philadelphia reports two fatal cases. In these nausea, vomiting, an erythematous skin eruption and fatal collapse occurred. The details of these cases are not given (vide BRITISH MEDICAL JOURNAL, 1901, vol. ii, EPITOME, page 91).

These cases suffice to show us that it is very advisable to be on our guard when ordering a drug we have been accustomed to use so freely until we almost think it innocuous.

The following is a report of the case I have observed:

A. G., aged 23 years, was sent to me from Canton on July 5th, 1911. He had been ill with dysentery on and off for ten months past, and the present attack commenced three weeks before admission. He stated that he had been passing a large quantity of blood in his stools, but there was not much at the time he came in. There was much blood-stained mucus; I frequently searched it for amoebae, but I could not find any.

On admission he was put on a mixture of magnesium and sodium sulphate, ½ oz. every four hours. After two days he had a single rectal wash of boric acid and warm water to ease the straining. At this time he was passing 10 to 13 stools daily, consisting of almost pure blood-stained mucus.

On July 8th he was put on tinct. opii ♏ xxx, pulv. ipecac. gr. xxx, diminishing the dose each day. On July 16th (the tenth day) as he had not improved he was put back to the magnesium and sodium sulphate solution, and in addition a rectal wash of boric acid (saturated solution) and water, ½ pint each, was given night and morning. This immediately lessened the number of stools, and the wash was continued as long as I found mucus. I saw the wash each day, and apparently all was returned on each occasion.

This treatment was continued for over three weeks, and the patient was rapidly improving, taking his food well, and up and about; on the day before the onset of the symptoms of poisoning he only passed two stools in addition to the rectal washes.

On August 9th the patient was up and about, was taking his food well, and there was no elevation of temperature.

On the morning of August 10th I found him in bed with a rash covering the whole body, very like a bromide rash, generally scattered, but on the extensor surfaces the papules were gathered more thickly, erythematous in character, disappearing on pressure, not at first hard, although each papule could be distinguished. I at once recognzied it as a drug rash, and ordered the rectal injections to be discontinued and only plain water to be used. In the afternoon of the same day he became very restless and inclined to be noisy, so much so that later in the day he was put into a separate ward. On the next day he was more thickly covered, especially on the extensor surfaces and the face, and the spots were more shotty and hard, with a tendency to become purpuric. He was quite delirious, and the pulse very feeble; he could not sleep, and a dose of paraldehyde had no effect. On the morning of August 12th the rash was quite purpuric with hard shotty papules; he was quieter, through weakness. He slept after a dose of chloral, and later took some food. Next day the spots were becoming clearer, but still hard and shotty. His mind was quite clear and he was taking food well. He continued to improve, but on the morning

* Read at the Annual Meeting of the Hong Kong and China Branch of the British Medical Association.

of August 14th the eyelids were very puffy. There was no albumen in the urine. On August 18th the spots were scaling, but still hard generally; in a few places a little serum escaped, and in others pus, evidently due to infection by scratching with his nails.

By August 20th the colour of the rash had faded considerably, but the papules were still hard and shotty. The general health of the patient was better; he was anxious to get back to his home as his wife had been confined whilst he was in hospital; he left for Canton this day.

I heard from his doctor that after a few days' rest at home he was able to return to his work, and as he has not seen him since he presumes all is well.

This case illustrates the sudden onset of symptoms without any warning. It shows also the long duration of the rash after all drugs had been stopped, the delirium that accompanied the poisoning, the weakness of the pulse and danger to life if not recognized at once and stopped, as illustrated in Dr. Wood's cases in Philadelphia. The case shows also the possibility of mistaking the hard shotty papules for variola in its later stage, and also shows the inadvisability of anyone out of reach of skilled medical advice using boric acid rectal injections for dysentery. In this case no boric acid was given by the mouth, and it illustrates the rapidity and ease with which boric acid solution is absorbed by the bowel.

A CASE OF VEGETABLE GASTROLITH.

BY

PEVERELL S. HICHENS, M.D.OXON., F.R.C.P.LOND.,

HONORARY PHYSICIAN, NORTHAMPTON GENERAL HOSPITAL;

AND

N. B. ODGERS, M.CH.OXON., F.R.C.S.ENG.,

HONORARY ASSISTANT SURGEON, NORTHAMPTON GENERAL HOSPITAL.

THE patient, a young woman of 24, made her appearance at the out-patient department of the Northampton General Hospital in May, 1911, complaining of pain and a sinking feeling in the stomach and vomiting for the past month. No blood had been vomited. She gave no history of any peculiar habits in her eating.

On examination she was found to have a large tumour running across the epigastrium. It was of a peculiar character, being smooth, hard, and rounded, both above and below. The lower edge reached to the umbilicus. The tumour filled up the whole space between the angle of the ribs. It was freely movable on respiration, and on deep inspiration the examining hand could be slipped above the rounded upper limit of the tumour and hold it down.

Many speculations were made as to what the mass could be. Amongst them an anomalous floating kidney was suggested, but, on the whole, the most likely diagnosis seemed to be a floating liver, causing gastric symptoms from the displacement

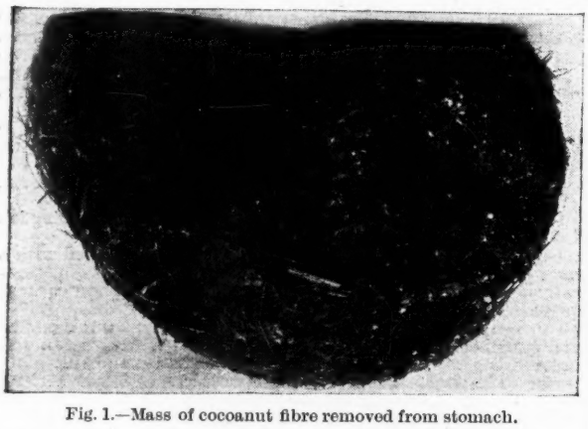


Fig. 1.—Mass of cocoanut fibre removed from stomach.

of the stomach. Against this diagnosis was the fact that there was apparently a fingerbreadth of liver dullness at the fifth right rib, with resonance above and below it.

An exploratory operation was considered, but it was postponed, and the patient recovered entirely from her symptoms with rest in bed in the hospital and a light diet, the tumour, however, remaining as before.

Acting on the supposition of the tumour being a floating liver, she was given a suitable abdominal belt before leaving the hospital on June 24th.

Nothing more was heard of the patient till early in August, when Dr. A. W. Moore, her medical attendant at Stony Stratford, wrote to tell us that the most startling developments had taken place. She had been seized again with very acute pain in the abdomen, with rigidity, distension, a rapid pulse, and constant vomiting. An enema was given, and two masses, like pieces of a doormat, came away, one the size of a turkey's egg and one the size of a pigeon's egg. It then transpired, on a cross-examination of the patient, that she had been in the habit of eating wood and the fibre on the outside of cocoanuts.

Four months ago she went to a fair and secured a cocoanut at a cocoanut-shy, and ate, not only the interior, but the fibre from the outside. Dr. Moore considered that the acute attack of pain was due to the passage of the two masses of fibre through the pylorus and along the small intestine, accompanied by the formation of a temporary intestinal obstruction. Before the passage of the fibre, he and Dr. Bull, who had also seen her, had come to the conclusion that the tumour was connected with the stomach.

The patient was readmitted into the hospital, and was operated on by Mr. Odgers. The stomach was opened by a longitudinal incision, and a large tumour, consisting entirely, apparently, of matted cocoanut fibre, was removed from it. The tumour completely filled the stomach, and formed an exact cast of it. It is shown in the accompanying illustration. The weight of the tumour was 1 lb. 2¾ oz. Mixed with the tumour was a good deal of fat and gastric juice. It is interesting to note that the walls of the stomach seemed quite healthy and uninflamed, and not at all irritated by their embarrassing inmate. The patient made an uninterrupted recovery after the operation, and has so far remained well since.

On thinking over this curious case, the most extraordinary thing about it was the power that the stomach retained of digesting food quite well while it was entirely filled with this great tumour of cocoanut fibre. When the patient made her first stay in the hospital she was up and about, and digesting perfectly well an ordinary mixed diet for three weeks before she left. This fact, combined with the absence of all history of her peculiar dietetic habits, seemed to conclusively negative the diagnosis of a stomach tumour which was entertained, only to be set aside.

A reference, however, to the subjoined literature shows that the same anomaly has been observed before. While masses of hair in the stomach have been found not infrequently—Dr. Butterworth[1] collected 42 cases from the literature in 1909—vegetable "gastroliths" appear to be very rare.

In 1854 Dr. Quain[2] reported a case very similar to ours for Dr. Bucknill to the Pathological Society:

> This patient was a young man, aged 22, an epileptic. For some time he had been in the habit of eating gravel, rags, and dirt, and had slight attacks of diarrhoea from time to time, "by which he got rid of them easily." No epigastric tumour was ever observed, the patient dying of acute peritonitis. At a *post-mortem* examination there was a perforation of the lesser curvature of the stomach the size of a shilling, and within the stomach a mass, 4 lb. in weight, composed almost entirely of cocoanut fibre and bits of string. "It is very remarkable that he appeared to be in his normal good health, took and digested all his meals, and was well nourished, with all this stuff in his paunch."

In 1861 Dr. Capelle[3] reported the case of a woman in whom a diagnosis of gastric carcinoma had been made. This she discredited by vomiting a large foreign body composed of vegetable débris. In 1881 Dr. Langenbach[4] removed by operation a gastrolith consisting of starch, fat, and amorphous material. This is figured in his paper, and is a cast of the stomach like our own specimen. This patient has been in the habit of taking "Nuss blätter-thee." In 1888 Dr. Kookver[5] described a similar specimen found *post mortem*, and in 1896 Dr. Schreiber[6] removed by operation a "phytobezoar" composed of Schwarzwürzel roots. The plant is said to be a popular remedy in Germany.

In the ruminants concretions are commonly found in the first or second stomachs. These are either so-called "fodder balls" composed of vegetable fibre, or hair balls. Similarly in the antelope and camel occur "bezoar stones," which are supposed to be famous antidotes.

Dr. Butterworth, in his paper on "hair-balls," finds, from the cases he has collected, that epigastric pain is the only constant symptom; vomiting occurs at some time in most cases; haematemesis is rare. Dyspepsia and an abdominal tumour are the two earliest symptoms as a rule. With regard to diagnosis, out of 33 cases, in 5 only was the condition correctly determined. In others the following were thought of: Cancer of the stomach, displaced spleen, floating kidney, faecal impaction in the transverse colon, and omental tumour. In Dr. Still's case[7] the conditions discussed were enlarged spleen and lymphosarcoma or a tuberculous infiltration. Of Dr. Butterworth's 33 cases,

16 recovered after an operation, 1 died; of cases not operated upon, 6 died of peritonitis and 10 of inanition.

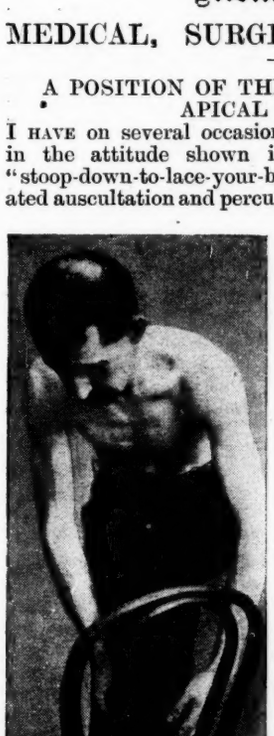
REFERENCES.
[1] Butterworth: *Journ. Amer. Med. Assoc.*, Chicago, 1909, vol. liii, p. 617. [2] Quain: *Trans. Path. Soc.*, 1854, vol. v, p. 145. [3] Capelle: *Journ. de Méd. de Bruxelles*, February, 1861, p. 147. [4] Langenbach: *Verhand. der deutsch. Gezell. für Chirurgie*, 1881, Ninth Congress, p. 54. [5] Kookver: *Zeit. für klin. Med.*, 1888, xiv, p. 203. [6] Schreiber, *Mitt. a. d. Grenzgeb. d. Med. a. d. Chirurgie*, 1896, 1, p. 729. [7] Still: *Proc. Roy. Soc. Med.*, Clinical Section, 1907–8, p. 212.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A POSITION OF THE THORAX FAVOURING APICAL DIAGNOSIS.

I HAVE on several occasions found that patients placed in the attitude shown in the photograph—a kind of "stoop-down-to-lace-your-boots" posture — give accentuated auscultation and percussion sounds in early tuberculous mischief at the pulmonary apices The assumption of this position allows the soft parts of the supraclavicular and infraclavicular regions—the latter a space between the deltoid and the clavicular portion of the pectoralis major muscles—to "drop in." The raised thigh, causing abdominal pressure, will push the diaphragm and lungs upwards, hence favouring an elevation of their apical portions. The bending forwards of the head — practically by its own weight—renders the depressor muscles lax, thereby causing "the roof" of the clavicular regions—platysma and cervical fascia—to become less tense, the latter being "pulled down" nearer the pulmonary apices by its deeper attachments. This posture is also serviceable in middle-lobe diagnosis, since the "auscultation triangle"—that is, the space between trapezius, latissimus dorsi, and rhomboideus major muscles—is widened, due to the pulling outwards of the inferior angle of the scapula, whereby the muscular thickness that usually abounds in this neighbourhood is considerably lessened.



Barton-on-Humber. CHARLES A. BECK.

ANAESTHESIA FOR SUBMUCOUS RESECTION OF THE SEPTUM.

WITH regard to Mr. Seymour Jones's note in the JOURNAL of February 24th, p. 421, advising the use of cocaine and adrenalin by submucous injection to procure anaesthesia in septal resection, may I say that I tried this method (substituting eucaine for cocaine) and gave it up years ago? The addition or use of a general anaesthetic in this operation is not necessary, certainly not in more than 2 per cent. of the cases. One can procure in five minutes absolute and safe anaesthesia lasting an hour by Freer's simple method: Dip *small* cotton-tips in 1 in 4,000 or 1 in 5,000 adrenalin solution, pick up on these a few crystals of pure cocaine hydrochloride and rub on the mucous membrane. Have the cocaine weighed in 1-grain packets—more than 2 grains are seldom necessary. Only once in about 100 cases of septal resection have I required a general anaesthetic, and that was in a lad who fainted whenever a nasal speculum was introduced into his nostril. Anaesthesia by submucous injection is rarely necessary for any intranasal operation. What Dr. Walker Wood says in the JOURNAL (vol. ii, 1911, p. 1059) on this matter I can quite endorse.

Hamilton. JAMES ADAM, M.D.

TREATMENT OF PRURITUS VULVAE AND ANI.

DR. GIBBONS, in his very interesting lecture on pruritus vulvae and its treatment, makes no mention of urotropin, a drug which I have found of extraordinary value in these conditions. The notes of the following two cases will demonstrate its value in these very unpleasant and distressing conditions:

1. A lady, for whom I removed a broad ligament cyst, developed a most severe pruritus of the vulva, the irritation being extreme—so much so, that she scratched the parts until they bled. Careful examination of the vulva and vagina was made, but there was nothing to suggest a local cause. The urine was examined, and no abnormal product found. Various remedies were tried, but with little avail. I then prescribed urotropin, gr. 10 three times a day in water. Within a few days the itching entirely ceased, and the accompanying dermatitis disappeared. She has had no recurrence since this attack three years ago.

2. A man consulted me about intolerable itching of the anus and scrotum. He had been treated by several doctors, and had had a host of remedies tried, but all to no good. I examined the rectum, faeces, and urine, but could find no clue to its origin. As the intolerable itching was preying on his mind and medicinal remedies had failed, I dissected up the skin around the anus, after Sir Charles Ball's method. This promptly gave him relief, but it only lasted for a short time. Some weeks after the operation he wrote me to say the itching was as bad as ever. I then prescribed 10 gr. of urotropin three times daily in water, and also directed him to smear the parts with ung. metallorum. Almost at once the itching ceased, and has not returned up to the present—a period of two years.

Several other cases have had the same happy result, and, though I do not say this is a panacea for all cases, yet it is well worthy of a trial when careful examination of the parts has failed to reveal any definite cause.

C. E. CAMPBELL-HORSFALL, M.B., Ch.B. Vict. Univ.
Newquay.

MORTALITY AFTER OPERATIONS FOR APPENDICITIS.

THANKS to the promptitude with which medical men have cases of appendicitis operated on, the mortality is very much less than it used to be. Looking over the last 281 cases operated on in the quiescent stage, I find that no death occurred from the operation. A case of sudden death took place three weeks afterwards, but this is fortunately a very exceptional occurrence at so late a stage.

The last 93 cases of appendicitis with abscess formation, which were all operated on promptly, recovered. One case which was not operated on until septic absorption had taken place to a considerable extent died. It is satisfactory to find that the number of cases of general peritonitis sent to be operated on has greatly diminished during the last three years, and when sent they are at a much earlier stage, and recovery, therefore, is much more certain. Where patients have passed the third day of their illness the mortality is very high; when operated upon on the first or second day the mortality is frequently as low as 2 per cent.

This improvement is greatly helped by patients being brought to hospital or homes in the sitting-up posture, and also being operated on and nursed as nearly as possible in the Fowler position. Saline rectal infusion has been a powerful aid in diminishing the mortality.

J. CRAWFORD RENTON, M.D.,
Surgeon, Western Infirmary, Glasgow.

THE late Sir Henry Trentham Butlin left estate valued at £90,996.

UNDER the will of the late Miss Helen Swindells of Birkdale, Lancashire, the following institutions receive bequests to the amount set against their names: The Cancer Research and Pathological Department of the University of Manchester £5,000, Manchester Royal Infirmary £4,000, St. Mary's Hospital and the Hospital for Consumption and Diseases of the Throat £3,000 each, the Children's Hospital, Pendlebury, the Northern Counties Hospital for Incurables, and the Devonshire Hospital, Devon, £2,000 each, and the Southport and Birkdale Nursing Society £1,000.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

EAR AND THROAT HOSPITAL, BIRMINGHAM.

ABSCESS IN THE MIDDLE LOBE OF THE CEREBELLUM AND IN THE RIGHT TEMPORO-SPHENOIDAL LOBE.

(By WILFRID GLEGG, M.D., M.R.C.P., Assistant Surgeon.)

THE following case is of some interest on account of the deep situation of the abscesses in the brain.

The patient was a man aged 33, a jeweller by trade. He attended the out-patient department of the hospital at the end of January, 1911, with chronic otorrhoea in the right ear and a polypus. The discharge had persisted since childhood. The polypus was removed, and he was advised regarding further treatment.

At the end of November he was sent to the hospital by his doctor, and was admitted as an in-patient. He had been ill for a week before admission with pain in the right ear, deafness affecting both sides, general malaise, and attacks of vomiting. His temperature on admission was 100° F., and his pulse 108. There was discharge from the right ear, absence of the membrana tympani, and granulations in the tympanum. There was slight tenderness on pressure behind the ear. The C and C^2 forks were not heard on either side by air or bone conduction. The vestibular reaction was present on both sides but was less readily induced in the right ear. He could hear only a loud voice at a distance of one foot. On the left side there was evidence of former middle-ear suppuration, but the deafness on this side had been noticed first at the beginning of the present illness. There was right optic neuritis. A herpetic eruption on the right upper eyelid suggested irritation of the first division of the fifth nerve, and limitation of the outward movement of the right eye was noted at a later stage from paresis of the sixth nerve.

The day following admission a radical mastoid operation was performed on the right side. Pus was found in the mastoid antrum, and in the mastoid cells between the osseous meatus and the bulb of the lateral sinus. Unfortunately the wall of the lateral sinus was injured, and the packing required to stop haemorrhage prevented further procedures.

Four days later, as symptoms of septicaemia persisted, the internal jugular vein was tied, and the lateral sinus opened up. A white thrombus was removed. The posterior and inner walls of the mastoid antrum were cut away and an extradural abscess opened. The pus escaped along sinus forceps passed between the dura and the posterior surface of the petrous bone. A drainage tube was inserted and retained for five days until the temperature became normal.

The wound, after discharging freely, became dry and appeared to be healing. The patient's general condition then improved; he heard much better and took his food well. At this time the knee-jerks were found to be increased slightly, and there was an extensor plantar reflex but no ankle clonus. Kernig's sign was absent. There was spontaneous nystagmus on turning the eyes to the right. A fortnight after the last operation he became ill again and had several attacks of purposeless vomiting. The spontaneous nystagmus disappeared. Pain was complained of in the back of the head at the level of the nape of the neck. On December 22nd the cerebellum was explored from behind the lateral sinus, and then the right temporo-sphenoidal lobe, with negative results. Consciousness was not regained.

At the *post-mortem* examination a circumscribed abscess about 6 mm. in diameter was found within the middle lobe of the cerebellum. A second abscess was present in the right temporo-sphenoidal lobe immediately adjacent to the cerebellar abscess. The tentorium between was intact. There was slight oedema at the base of the brain and some excess of cerebro spinal fluid, but no definite signs of meningitis.

I am much indebted to Mr. Porter, the House-Surgeon, for assistance in obtaining these particulars of the case.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BATH AND BRISTOL BRANCH.

Bath, Wednesday, February 28th, 1912.

Dr. G. PARKER, President, in the Chair.

Decompression in Ordinary Practice.

MR. CHARLES A. BALLANCE, in opening a discussion on this subject, said that increased intracranial pressure was common to many morbid conditions occurring in the skull, and was the one common factor which made them more formidable than similar morbid conditions occurring elsewhere. This increased intracranial tension could, in many cases, be effectually relieved by operation. Nature effected cerebral decompression in certain circumstances: in hydrocephalic children the sutures gaped and uniform expansion of the skull occurred; in some cases of tumour absorption of bone from local pressure occurred, and when the inextensile capsule had been destroyed considerable relief to the pressure symptoms had been known to follow. Separation of the sutures could not be brought about by art. The methods of effecting cerebral decompression now available were: (1) Removal of a moderate quantity of fluid through a cannula from the subarachnoid space, as in lumbar puncture. (2) Continuous drainage of cerebro-spinal fluid through a small tube, either into another cavity or externally. (3) Decompressive craniectomy, an opening being made through the inextensile wall of the cranial cavity by removing bone and dura over an area of 2 square inches or more, through which free drainage of fluid could be established or a hernia cerebri might be allowed to occur. That would relieve the general intracranial pressure, even if the exciting cause could not be removed. It was not the mere bulk of a haemorrhage, an abscess, or a tumour which was the cause of the increased intracranial tension, but it was the increase in the amount of cerebro-spinal fluid which was induced by the presence of a foreign body. The acute symptoms, as a rule, arose, not from local but from general pressure, as was shown by the frequency of death from failure of respiration. Decompression by craniectomy averted all the dangers of general pressure, as was proved by the many instances in which recovery had ensued, though respiration had been re-established only on completion of the operation. There were two main divisions of the subject: I. Cerebral decompression for injury. II. Cerebral decompression for disease. I. *Decompression for Injury.*—Intracranial haemorrhage from injury might occur in such amount that life was immediately threatened; in these cases deepening coma was the dominant symptom, the increase of intracranial pressure was rapid, and operation was urgent. The chief varieties of such haemorrhages were: (1) *Extradural haemorrhage* from rupture of the middle meningeal artery. This was familiar to all, and nothing further need be said of it here. (2) *Intradural haemorrhage:* (*a*) *Of the newly-born*, occurring from pressure on the skull during birth. If not immediately fatal, such haemorrhages might cause various nerve disorders. Cushing had drawn attention to the surgical relief of this condition; his paper should prove a stimulant to much good work in this direction. Operation of a similar type was required for the pulsating subcutaneous tumours which sometimes resulted from injury to the head in young children. They might be pulsating haematoma, pulsating meningocele, or pulsating encephalocele. (*b*) *Intradural haemorrhage* from injury in later life. Of this the common examples were fracture of the base, injury to a sinus, fracture of the vault. (Cases of successful intervention in all these conditions were related.) (3) *Remote effects of injury* calling for decompressive operation. Only one of these conditions was noticed in detail, namely, blood cysts with so-called false membranes in the meninges (subdural space), resulting from haemorrhage. In these cases the original effusion of blood might be moderate in amount or, at any rate, did not give rise to increasing coma or other alarming symptom. The effused blood became encysted and, like a blood

collection in the tunica vaginalis testis, might continue to increase slowly in size. The signs of pressure on the brain were intermittent, the brain became accustomed to the presence of the cyst, and the patient was apparently well. From time to time a small fresh haemorrhage occurred, and then the symptoms recurred. Bearing in mind that in almost all serious head injuries blood was effused into the cranial cavity, it might well be that in certain cases of *intermittent headache*, *intermittent paralysis*, or *intermittent insanity* subsequent to head injury the lesion present was subdural haematocele, a condition certainly remediable by operation. (Prescott Hewett's case, and some cases of successful intervention from the lecturer's practice, were related.) (4) *Haemorrhage into the subarachnoid space* and into the brain itself also occurred in injuries causing laceration of the brain, even though no fracture of the skull had occurred. The extravasated blood caused increase in the cerebro-spinal fluid. The patient remained for days or longer in the state of cerebral irritation; conscious only when roused, curled up in bed, restless, sleepless, and irritable. In such cases great relief was afforded by lumbar puncture. An instance was related. II. *Decompression for disease.*—(1) *Apoplexy:* In this emergency acute compression and laceration of the brain occurred; the patient did not die from loss of blood but from pressure on the brain. The pressure was both local, from the pressure of the extravasated blood, and general, from the increase of cerebro-spinal fluid caused thereby. Lumbar puncture had been done in cases of acute apoplexy with apparent benefit. Certain cases of chronic apoplexy had been submitted to operation and the clot removed, but in the *acute stage* only one attempt had, so far as Mr. Ballance was aware, been made to relieve the pressure by a craniectomy. It seemed to him that the indication to operate was in these cases clear. Dangerous pressure on the brain, the cause of coma and arrest of respiration, would be relieved, the symptoms produced by local pressure would be relieved at once, and no further local damage would occur. The operation would be simple; the patient need not even be disturbed; the preparation of the site of operation would be quite easy. The craniectomy need not be large; the incision in the brain should be behind the fissure of Rolando and above the fissure of Sylvius, and it should be made through the summit of a convolution. The effused blood would escape through the incision, and, as the ruptured vessel was commonly a small one, no further bleeding would be likely to occur; in any case a strip of ribbon gauze soaked in adrenalin solution and passed through the incision in the brain would arrest it. (2) *Decompression for hydrocephalus:* Lumbar puncture often failed because the foramina in the roof of the fourth ventricle were blocked by adhesions. Drainage of the lateral ventricles into the subdural space might be effected by means of a platinum tube passed into the descending cornu of the lateral ventricle. Continuous drainage was essential for decompression, and hence even frequent tapping through the anterior fontanelle was of no permanent service. Drainage of the fourth ventricle necessitated an occipital craniectomy extending downwards to the foramen magnum. (A successful case published by the late Alexander Bruce was related.) An indirect method of decompression was ligation of both common or both internal carotid arteries. It acted by diminishing the secretion from the choroid plexuses, but as a rule was only to be thought of if the head continued to enlarge after subdural drainage had been established. (3) *Decompression for meningitis:* In meningitis serosa from local disease of the cranium and from insolation lumbar puncture, single or repeated, might effect a cure. In suppurative meningitis remarkable recoveries had followed decompressive craniectomy. In suppurative meningitis the infection rapidly spread in the course of the stream of cerebro-spinal fluid over the hemispheres and down the spinal theca. It might be that irrigation of the subarachnoid space from the lateral ventricle and out through an opening made in the lumbar theca might prove useful in some of these desperate cases. In tuberculous meningitis surgery had not yet gained many victories, but they might well hope that, as knowledge increased, better results would in the future be obtained from surgical intervention. (A case from the lecturer's practice was referred to in which recovery from pronounced symptoms of tuberculous meningitis followed operation limited to the removal of local tuberculous disease of a cranial bone.) (4) *Decompression for brain abscess:* As he had elsewhere very fully dealt with the treatment of brain abscess, it would not be further discussed here. Decompression and evacuation of pus from the brain was one of the great triumphs of modern surgery. (5) *Decompression for brain tumour:* Decompression relieved the symptoms which depended on increased intracranial tension—notably the headache and the optic neuritis; the patient was made comfortable and comparatively safe, and his sight was saved by a decompressive operation done in time. The best results were obtained when the decompression was made over the site of the tumour, but if the syndrome symptoms were present alone localization symptoms should not be awaited, but decompression should be done as soon as optic neuritis was present. (Ten cases of brain tumour from the lecturer's practice were related and commented upon, illustrating the diagnosis of brain tumour and successful and unsuccessful operations.) In conclusion, a decompressive operation should, he would say, be done: (1) *In certain cases of injury to the head*, especially (*a*) in fractured base, and (*b*) in those cases in which, after apparent recovery from an injury to the head, there were intermittent symptoms, such as headache, insanity, or paralysis. In these cases the lesion was often ingravescent subdural haemorrhage. (2) In selected cases of *apoplexy* in the acute stage. (3) *In tumour of the brain* decompression should be done before vision was lost from optic neuritis or the mind was wrecked by hydrocephalus or constant suffering. The tumour when localized should be removed, but in all infiltrating tumours simple decompression was the method of choice. No patient should be allowed to die from mere increased intracranial tension, and no patient should be allowed to become blind from optic neuritis. The increased intracranial tension was the one point of the disease which was always vulnerable to surgical attack, and, whether localization diagnosis was possible or not, decompression should be carried out without delay. *Deepening coma*, in recent injury to the head and in apoplexy, *intermittent symptoms*, after apparent recovery from head injury, and *optic neuritis*, in cerebral tumour, should lead the surgeon to take prompt action. In this way many lives would be saved, and much suffering averted, but success would not always be obtained, for, as Caesar said, "Et ad subeundum periculum, et ad vitandum, multum fortuna valet."

Sir DAVID FERRIER said he believed that he himself was the first to advocate operations on the brain itself, basing his recommendations on the results obtained on animals, under strict Listerian precautions, in conjunction with his colleague, the late Professor Gerald Yeo, nearly thirty years ago; and he took an active part in the first operation for the removal of cerebral tumour, which was performed by Mr. Godlee, the present President of the Royal College of Surgeons, on a case under the care of the late Dr. Hughes Bennett. In that case the patient, though the operation was at first apparently successful, died from secondary complications, but it attracted the attention of the profession to the possibilities opened up for cerebral surgery. He was, perhaps, more sanguine then as to the benefits likely to result from the surgical treatment of cerebral tumours than the experience of the last twenty-seven years had altogether justified. This, however, was not the fault of the surgeons, for they had so perfected their methods that they always deserved, if they could not always command, success. The difficulties were in the nature of the disease itself, for only a relatively small proportion of cerebral tumours —7 per cent. to 10 per cent.—were amenable to operation, and even this proportion would be reduced if they were to exclude the diffuse tumours from the operable category. The mortality, even in the operable cases, was, however, very great, and only a very small proportion of those operated upon could be said to have been cured in the sense of having been restored to complete health and usefulness. Desperate diseases, however, required desperate remedies. The question which had been so ably put before the meeting by Mr. Ballance was whether, even in cases of cerebral tumour which they could not hope to remove, they could give greater relief by surgical measures than by any other form of treatment. Inasmuch as the danger, and sooner or later the fatal effect, of a cerebral tumour was

due, for the most part, to the increased intracranial tension which it caused, it would seem the most rational procedure to relieve this by a decompression operation—that is to say, free opening of the skull and incision of the inextensible dura mater; and, as a matter of fact, experience had shown that all the general symptoms of cerebral tumour frequently disappeared as if by magic on this being done. In particular the optic neuritis, which, if allowed to continue, might result in optic atrophy and incurable blindness, practically always disappeared after a decompression operation; and this was one of the great reasons for operation as soon as the symptoms had declared themselves. He (Sir David Ferrier) said he would not go into any details as to where the opening should be made, as this had been so thoroughly dealt with by Mr. Ballance himself. He thought, however, that opening the skull and dura mater was attended by greater risks in the case of cerebral tumours than under other conditions; and the same was true of lumbar puncture, which, under ordinary conditions, was performed practically every day without risk for purposes of diagnosis. He had never seen a case of apoplexy—apart from traumatic haemorrhage—treated by decompression, but Mr. Ballance had advanced many reasons for considering it advisable, and these were deserving of serious consideration. He referred to some of the cases which Mr. Ballance had reported, and thoroughly approved of the measures he had resorted to for their relief, which had often proved of a permanent character.

Dr. MICHELL CLARKE said that they were much indebted to Mr. Ballance for coming down to speak to them on a subject of which he had such a large experience and on which he was a recognized authority, and also to Sir David Ferrier, a chief pioneer in the localization of diseases of the brain, and whose researches lay at the foundation of the modern surgical treatment of intracranial tumours. He felt that there was nothing to be added to what Mr. Ballance had told them as to the value of decompression operations in intracranial disease. With regard to trephining for apoplexy, it was possible that a new field for surgery would be found in cases of large cerebral haemorrhages in the region of the internal capsule. It would, however, be necessary to be sure of the diagnosis from thrombosis, which in some instances was by no means easy, and also to carefully select the cases. With regard to intracranial tumours, in which his experience of decompression operations almost entirely lay, there could be no doubt of the relief afforded to the sufferers by what was now a safe operation. He thought, however, that every effort to arrive at an exact localization of a growth should be exhausted before an operation for simple decompression was resorted to; not that the latter should be unduly delayed, but that it should always be borne in mind that their chief objective in cerebral tumour should be its removal. There might be a danger that the ease with which a decompression operation could be done and the relief offered by it might lead them to relax their efforts in arriving at an exact localization. In his experience localization was more difficult if a decompression operation had been done first. As to the seat of election for operation, he preferred the occipital site, and would always avoid the left side of the cranium if possible. Sometimes by a fortunate chance a decompression operation resulted in the discovery of a tumour, as in a case of his own, in which trephining was done over a tender spot on the skull, which constituted the only localizing sign, and resulted in the successful removal of a large tumour. The net result of operations for cerebral tumours, as regarded *restitutio ad integram*, had undoubtedly disappointed the hopes that were raised when these operations were first undertaken.

Mr. RICHARDSON CROSS said the experiments and investigations made by Sir David Ferrier on the functions of the different brain areas, followed by the clinical work of himself and other physicians, had led to splendid results at the hands of Mr. Ballance, Sir Victor Horsley, and other surgeons. If the actual cures after operation were even less numerous than they were, the effort to relieve would still be advisable; for alleviation of serious symptoms followed apparently in a large majority of the cases. In cerebral tumour, inflammation and abscess, the classical symptoms depended upon intracranial pressure, and the surgical tension here required relief, just as it was needed in periostitis or glaucoma. Severe headache and vomiting caused great distress to the patient, while the optic neuritis was, as a rule, sooner or later followed by impairment of sight. Moreover, mental symptoms might also develop, and decompression by relieving tension should relieve all these symptoms and in certain cases it might be the first step in a cure of the disease. He would not be too hasty in recommending operation for double optic neuritis only; many such cases, especially in young patients, cleared up and got well; but where vomiting was present and with it when sight was beginning to fail, one could see the importance of relieving the intracranial pressure. The question remained, What was the extra risk to the patient's life or comfort that followed operation? If decompression was an absolutely safe procedure in competent hands, it should probably be resorted to much more often than was at present the case. He wished to draw attention to the importance in any case of intracranial mischief of the localizing value of the eye symptoms—the state of the extraocular and intraocular muscles, any prominence of an eyeball, and particularly to the field of vision which, taken by delicate light and colour tests, might show early symptoms of pressure on the visual tracts.

Dr. G. H. W. ALMOND advocated decompression in certain forms of cerebral oedema. Alexander had performed fenestration on certain cases of chronic epilepsy with some favourable results. Lumbar puncture was sometimes successful in acute oedema, but not always. In such cases decompression should be performed. He related the case of a woman of 35 who died in coma following status epilepticus. She had had periodic sick headache for years. With the gradual addiction to alcohol her kidneys became granular, and an epileptiform nature was gradually assumed by her attacks. Eighteen hours before death she suddenly developed a condition of status epilepticus. She had over 100 fits, and died in deep coma, her pupils being pinpoint, and breathing Cheyne-Stokes. The membranes of the brain were intensely oedematous, and several ounces of free fluid dripped away. There were signs of old tuberculosis in the lungs and pleura, and the kidneys were more or less granular. All the usual remedies were unavailing.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Friday, March 8th, 1912.

Mr. W. G. SPENCER, Vice-President, in the Chair.

Fibrinous Discharge from the Nose.

DR. A. M. GOSSAGE read a paper entitled "A Family with Fibrinous Discharge from the Nose." He pointed out that fibrinous rhinitis was not very uncommon in children. According to Lambert Lack it was commonest in early childhood, and was ushered in by slight malaise, which was not sufficient to cause the child to lie up and only lasted for a day or two. There was a nasal discharge associated with fibrinous or membranous exudation on the nasal mucous membrane, which persisted for six to eight weeks, and then cleared up, leaving no sequelae. In nearly all the cases bacilli indistinguishable from the Klebs-Loeffler bacillus could be found, but, although the disease was infectious, it did not seem to give rise to true clinical diphtheria. True diphtheria, of course, invaded the nostrils not infrequently, and gave rise to a severe illness with formation of membrane in the nose. A further type of membranous formation in the nose had been described by Baumgarten. A strong baby girl was noticed from birth to have crusts about the nose. With a probe and wool a long thin tube, like parchment, could be obtained from the nostrils, which took three to four days to re-form. At the age of 3 years a bad smell was noticed, and after four years typical ozaena had developed. When the child was 2 months old the nose was washed out with iodo-glycerine, and after this no more tubes were formed, but occasionally there were slight crusts; later even these disappeared. The mother suffered from ozaena, but there was no other abnormality in the family; a twin sister was

quite normal. Baumgarten further stated that he had met with two other similar cases: tube formation in early infancy and development of ozaena about the fifth year of life. He considered that ozaena was frequently inherited, chiefly from mother to daughter, and was much commoner in women. Dr. Gossage had recently come across a remarkable family, several members of which had a persistent fibrinous discharge from the nose. The condition was first noticed at birth, and apparently persisted throughout life. It caused no impairment of health, the bronchitis from which the first member he had seen was suffering having been probably an accidental concomitant. There was only very slight discomfort, though there was a tendency to the development of a bad smell if the nostrils were not kept clear. In no case, however, was there any sign of ozaena. Specimens of the discharge, which usually took about twelve hours to re-form, were obtained from the father and two of the children, and in all cases were found to be a more or less complete fibrinous cast of the nostrils. Dr. Ross had kindly examined the discharge and reported as follows: Film preparations showed polymorphonuclear cells embedded in a network of fibrinous matter. The organisms present were bacilli, diplococci, and short diplo-bacilli; no evidence of *Bacillus diphtheriae* or *Bacillus xerosis*. Attempts to embed in paraffin and cut sections failed owing to the friability of the material. One of the boys had been taken into the hospital for twenty-four hours, but, unfortunately, had no discharge during that time. The nostrils had been examined on several occasions and nothing abnormal could be seen except once, when some fibrinous exudation was found over one lower turbinate bone. At least four generations had been affected, and males and females were attacked equally. Of the children of affected persons with normal mates, roughly half were affected and half normal. This suggested that the inheritance afforded another example of Mendelism in human beings, and that the abnormal condition was dominant to the normal. Unfortunately, there was no record of any offspring from the normal members of the family, so that it was impossible to say whether all their children were normal, as would be expected. It was a matter of great interest to find a fibrinous exudation on a mucous membrane resulting from a congenital abnormality, and not from some infective inflammatory process. He had not been able to find any record of a similar condition in medical literature.

Ruptured Intestine.

Mr. WILFRED TROTTER communicated a note on a case of ruptured intestine, with especial reference to the mode of production of the lesion. The case was one which appeared to throw some light upon a subject about which there had been some controversy—namely, the mechanics of the production of traumatic rupture of the intestine.

The patient, a youth aged 18, was admitted to the University College Hospital during the evening of August 30th, 1910. Some hours earlier, in the course of his work as a navvy, he was caught between the buffers of two ballast wagons and severely crushed. The wagons being a good deal lower than ordinary railway trucks, the buffers caught him over the lower half of the abdomen. He was held by them for a few moments under severe pressure.

Operation was undertaken somewhat less than twenty-four hours after the accident. Separation of the intestinal coils revealed a segment of ileum lying to the left of the spine against the posterior abdominal wall, and showing an opening half an inch across, which was discharging semi-solid faeces of a green colour. Examination of the damaged loop showed at once that suture was not possible. Enterectomy was therefore done, and the bowel united end to end.

The features of the injury could be well seen in the specimen shown, which preserved most of the appearances visible at the operation, and in a drawing. For a distance of about 2 in. the peritoneum of the bowel had been torn through and had shrunk back. Through this opening the tube of mucous membrane had protruded, after being torn away from the outer coats. In the most prominent part of the prolapsed mucous membrane was a round opening, the size of a sixpence.

The appearances seemed to show that the lesion was produced by a true bursting of the intestine. Traumatic rupture of the intestine had been attributed, and no doubt was due, to the action of one or other of three different mechanisms—namely, crushing, laceration, and bursting. There was no doubt that one or other of the two former caused the lesion of the bowel in many cases. Upon the third, however, a good deal of doubt had been thrown, and some authorities were inclined to question whether it ever was a cause of rupture. Experiments had shown that when the abdomen was compressed the pressure within the bowel, as might have been expected, was not increased above the general intra-abdominal pressure, and that therefore there was no tendency for bursting of the bowel to occur. When, however, a loop of bowel was not supported by the general intra-abdominal pressure—when, that is to say, it lay at a hernial opening or within a hernial sac—rupture was likely to occur if the abdomen was violently compressed. It had been shown comparatively recently that the influence of a hernia in predisposing to the occurrence of rupture was an important one. While admitting this, he was not prepared to agree that bursting could occur only in presence of a hernia. None such was discoverable in his case. It seemed, however, that bursting might be brought about in another way. If a loop of bowel were caught between the compressing force and the spine in such a way that both limbs of the loop were occluded, the contents of the latter might be put under such pressure that bursting occurred. Some such mechanism as that appeared to be the explanation of the state of affairs found in his patient.

SECTION OF ANAESTHETICS.

AT a meeting on March 1st, Dr. MCCARDIE, President, in the chair, Mr. ROOD, after describing his own and other methods of conducting *Ether infusion anaesthesia*, said that he had now employed his own method in 136 cases, and had had practically no bad after-results. Only 6 patients vomited, and 3 of these had swallowed blood. Mr. C. M. PAGE, in a paper on *Hedonal infusion anaesthesia*, said that in 530 cases reported from Russian clinics, death was in no instance attributable to the anaesthetic. In these the infusion was interrupted. In his own cases, which numbered 75, the drug was infused *continuously* from a special tank, and a 0.75 per cent. solution of hedonal in normal saline was employed. In all instances good anaesthesia was obtained. The largest amount of solution infused in any one case was 2,000 c.cm., the smallest was 40 c.cm. The anaesthesia obtained was steady and associated with great muscular relaxation. The patient usually remained sleeping for six to eight hours after the operation was finished. The only danger likely to arise during the anaesthesia was cyanosis, either from obstruction to the air passages or from a too rapid dosage. The solution should be allowed to run in at the commencement at a rate of 50 to 100 c.cm. per minute. Mr. BARRINGTON WARD reported the first case of death during hedonal anaesthesia in this country. The patient was a girl aged 8, of fair size and development, and, so far as could be determined, quite normal except for tuberculous glands in the neck and enlarged tonsils. The method used was that described by Mr. Page. The injection was normal, the left saphenous vein being selected. The operation was commenced ten minutes after the commencement of anaesthetization, and at that time 300 c.cm. of a 0.75 per cent. hedonal solution had been used. The child was of a good colour and not at all deeply under. After another twenty minutes the skin stitches were being put in when, without any warning, the patient stopped breathing. The colour remained good, and there was no respiratory obstruction whatever. Efforts at resuscitation were made by artificial respiration, bleeding, injection of strychnine, atropine and ether, massage of the heart through the abdomen, but, unfortunately, without success, though they were persisted in for an hour and a half. During the actual period of operative procedure another 200 c.cm. of the 0.75 per cent. hedonal solution had been used, making a total of 500 c.cm. used from the commencement of the administration until the respiration failed. *Post mortem* there was an enlargement of lymphoid tissue generally all over the body. The thymus was distinctly enlarged. The heart was not abnormal in colour, but it was dilated, and on subsequent microscopical examination exhibited fatty degeneration. The dose administered was not excessive for the age and weight of the patient, and in the other cases, 20 or 30 in number, he had had no trouble or anxiety. The PRESIDENT said the section was indebted to Mr. Barrington Ward for the clear account he had given of a fatal case under hedonal. He only wished equally good reports of all fatalities during anaesthesia were furnished, for

then more would be learnt about the causes of such fatalities In the subsequent discussion Mr. BARTON held that infusion anaesthesia offered, in ordinary cases, better results than did scopolamine, morphine, and open ether. Dr. HAROLD LOW regarded the anaesthesia obtained under hedonal as perfect, but did not think that either infusion methods would become a routine measure. Dr. SILK pointed out the not uncommon difficulty in finding a suitable vein, the importance of the anaesthetist being at the head of the patient, and the danger of a possible clot being washed into the circulation, but thought the infusion method might be found useful when shock was specially to be anticipated. Dr. BLUMFELD, in view of the length of time the induction of anaesthesia took in ether infusion, advocated a stronger solution than 5 per cent. The PRESIDENT thought that in these new methods anaesthetists possessed an addition to their armamentarium which might be useful in selected cases for operations on the upper part of the body, just as spinal anaesthesia was specially applicable in certain cases in the lower half of the body. In his reply, Mr. ROOD pointed to the absence of after-sickness and bronchitis as great advantages. Mr. PAGE, also replying, said the advantages of hedonal over ether infusion was, he thought, greater simplicity of the apparatus necessary. The solution could also be run in at a higher temperature than was possible with the ether method. Hedonal was also said to be less irritating to the tissues than ether, and as it was excreted by the kidneys there was no irritation of the lungs; being but slowly excreted, less fluid had to be injected to maintain anaesthesia.

LARYNGOLOGICAL SECTION.

AT a meeting on March 1st, Dr. STCLAIR THOMSON, President, in the chair, the following were among the exhibits:—Dr. STCLAIR THOMSON: (1) A specimen of *Epithelioma of the larynx* removed *post mortem* from a man aged only 23. (2) A case of *Combined tuberculosis and syphilis of the larynx* in a woman aged 43. The patient had no physical signs in the chest, but the Wassermann reaction was positive, and tubercle bacilli had been found in the sputum. Dr. H. J. DAVIS: (1) A case of *Double abductor paralysis* in which he proposed to perform thyrotomy with the object of removing completely the left arytenoid and vocal cord. The majority of those present favoured tracheotomy in this case. (2) A patient, aged 41, whose vocal cords had been destroyed by a cut throat; but a growth of granulation and cicatricial tissue had taken their place, and he was capable of a fair amount of phonation. (3) A case of *Functional aphonia* in a child aged 6, following tracheotomy at the age of 2 years; faradization and tonics had brought about a cure. Mr. G. WILKINSON: A case of severe *Epistaxis* associated with multiple hereditary telangiectases in a man aged 62; the haemorrhage proceeding from the septum had been controlled by cauterization. Mr. W. G. HOWARTH: A case in which an intrinsic carcinoma of the larynx had been removed under *Hedonal infusion anaesthesia*, to bring to notice the great advantages that this method of anaesthesia afforded in laryngeal operations. Mr. C. W. M. HOPE: A case of *Herpetic vesicles* affecting the mucous membrane of the soft palate.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on February 20th, Dr. S. LODGE in the chair, Mr. BASIL HUGHES, in a paper on recent advances in the *Diagnosis and treatment of syphilis*, said that the first essential was an early diagnosis. The Hunterian chancre might be difficult to find, atypical or modified by the presence of soft sore or other mixed infection. Microscopical examination by means of the Indian ink method for the demonstration of the spirochaete was of great assistance. The presence of indurated glands in the groin was also of great value. Wassermann's reaction he regarded as all-important in the diagnosis of syphilis. He made use of Dr. d'Este Emery's method, which had been found to give an accurate result in 98 per cent. of cases. He then demonstrated the method of performing the reaction. This had a very important bearing on the treatment of early cases. If positive, the chancre could be excised before the infection became general. Wassermann's test was also valuable in cases such as ulcer of tongue, gumma of certain muscles, gummatous adenitis of the groin or axilla, tertiary laryngitis, gumma of the tonsil. Tabetics invariably gave a positive Wassermann reaction. In general paralysis of the insane the cerebro-spinal fluid was also positive—a condition which did not obtain in either tabes or gummatous disease of the central nervous system. Prophylaxis did not receive the attention it deserved. The State should undertake more responsibility in the matter. A strong plea was entered for the more complete treatment of venereal disease in charity-supported institutions, Government subsidies being urged, should the funds for that purpose fail. In respect of mercurial treatment it was desirable to get the patients under its influence as rapidly as possible by inunction of intramuscular injection. Tolerance was aided by decoct. sarsae co. Throughout any course of treatment, control by the Wassermann test was necessary. Treatment should be continued until the reaction remained negative for twelve months after the treatment had been stopped. In respect to salvarsan, he had used it in 100 cases during the last two years. He relied mainly on the intravenous method, and firmly believed that the dangers of the drug were entirely due to neglect in the avoidance of cases in whom gross lesions of the fundus oculi, of the heart, of the chest, or of a septic character were present, or to neglect in the careful administration of the drug, which should be injected in a state of perfect solution and of proper alkalinity. The solution must not be spilled in the wound, and a second dose should not be given soon after the first. With these precautions most of the after-results could be avoided. The most important of these were: A metallic taste in the mouth, headache, vomiting, diarrhoea, rise of temperature, albuminuria, skin rashes, and rigors. A single dose was rarely sufficient. The State or the municipalities should provide facilities for the performance of the Wassermann test of the same kind as those provided in relation to diphtheria, typhoid, and phthisis.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

AT a pathological meeting on February 16th, Mr. H. LITTLEWOOD, President, in the chair, Mr. R. CATTLEY and Mr. A. S. GRÜNBAUM, speaking of the genesis of chronic arteritis, said that in *Syphilitic arteritis* the earliest manifestation was an irregular hypertrophy of the internal elastic lamina, which was quickly followed by a hypertrophy of the muscular coat. A proliferative thickening of the endothelial and subendothelial tissues occurred antecedent to marked degeneration of the muscular and elastic elements. Dr. HELEN G. GRÜNBAUM and Mr. A. S. GRÜNBAUM read notes on further experiments on the treatment of inoculated *Rat sarcoma* and on the accompanying blood changes. In a previous communication the limit of size in which a cure could be effected was placed at 1.5 cm. diameter. By the addition of adrenalin, tumours of much larger size could be cured. In susceptible animals the antihaemolytic power of the serum to cobra venom was diminished, so that an examination of the blood would permit of prediction whether an animal could be successfully inoculated. By reducing their antihaemolytic power, refractory animals might be rendered susceptible. The following were among the exhibits: Mr. H. LITTLEWOOD: Gall stones removed from a case of *Suppurative cholecystitis* in the third week of typhoid. The typhoid bacillus was germinated in the pus. Dr. C. OLDFIELD: A specimen of haemorrhage into the ovary which had produced signs and symptoms resembling those of ectopic gestation. Dr. A. L. WHITEHEAD and Dr. M. J. STEWART: A malignant tumour of the lacrymal gland, showing the presence of both squamous and columnar-cell carcinoma. Mr. H. COLLINSON and Dr. M. J. STEWART: A *Scirrhus of the breast*, showing fibrosis of the perivascular lymphatics in the surrounding fat. The patient had lymphatic oedema of the arm. Dr. M. J. STEWART: The organs from a case of partial *Transposition of viscera*. The stomach and spleen only were transposed, while the left lobe of the liver showed marked hypertrophy. Dr. W. H. MAXWELL TELLING, Mr. J. F. DOBSON, and Dr. M. J. STEWART: Preparations from a case of *Epithelioma of the cheek*, regarded as a result of *x*-ray treatment.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on February 16th, Dr. FREELAND FERGUS, President, in the chair, Dr. ANDREW WILSON read a short note on 3 cases of *Scotoma scintillans* occurring as a symptom of migraine, and showed an unusually large lacrymal sac excised on account of *Dacryocystitis*. Dr. A. J. BALLANTYNE showed a case of *Concomitant strabismus* which had followed a fracture of the vault of the skull in the frontal region; the strabismus was not due to injury to any ocular nerve or muscle, but had been latent at the time of the accident, and had developed in consequence of the occlusion of the eye by dressings during the healing of the fracture. Dr. LEWIS MCMILLAN read notes of a case, a boy, aged 8 years, in whom *Orbital cellulitis*, occurring as a sequela to scarlet fever, had necessitated enucleation of the affected eye. Dr. BROWNLOW RIDDELL showed a patient with *Choroideremia*, or gyrate atrophy of the choroid and retina. Dr. LOGAN TAYLOR, in a communication on malignant intraocular tumours, based on cases treated in Glasgow Eye Infirmary during the past three years, dealt specially with the so-called glioma or *Neuro-epithelioma*. After discussing the lymphatic connexions of the eye and the paths along which the spread of the tumour might occur, he urged that, having regard to present knowledge of the pathology of these growths, more extensive operations for their removal should be carried out in all cases, and as early as possible. The procedure recommended was complete exenteration of the orbit with division of the optic nerve at the optic foramen. Dr. H. LEASK showed 2 cases of penetrating injury in which the foreign body was shown by radiograms to be still in the eyeball or orbit after the lapse of many years, and read notes of a case of *Intraocular tumour* secondary to a scirrhus of the breast. Dr. W. B. I. POLLOCK gave a demonstration of specimens of glioma retinae.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on March 1st, Mr. W. MCADAM ECCLES, President, in the chair, Mr. F. L. PROVIS, in a paper on *Pain in the female iliac region*, said displacement of the uterus was its most common cause. Palliative measures failed to relieve these cases; surgical treatment was necessary so as to prevent involvement of the appendages. Ventrifixation he thought the best operation. Dysmenorrhoea other than spasmodic was either congestive or inflammatory, and pain referred to the ileum was common. Frequently no alteration of the ovary could be found, except tenderness; in such cases there was probably an ovaritis, or ovarian neuralgia. It was a neurosis or neurasthenic condition. The fact that in many a slight enlargement of the Fallopian tube could be made out pointed to a possibly inflammatory origin, and the cases should be treated as such. In a very few cases only was removal of the ovary justifiable. He next considered alterations in the position and relations of the broad ligaments whereby they tended to obstruct the entrance of the pelvis; or by becoming adherent to the gut obstructed the passage of faeces. It was a true proptosis, and he considered it of fairly frequent occurrence. It necessitated operative interference with subsequent abdominal massage. The PRESIDENT said that pain in the iliac region was occasionally found in middle-aged stout males as an indication of digestive troubles. In young women it was not infrequently seen with spinal curvature. The patient often significantly placed the fingers of the hand over the right iliac fossa, and the thumb towards the right sacro-iliac synchondrosis. In these cases he thought the scoliosis secondary to some pelvic trouble. Dr. MANSELL MOULLIN said the particular condition spoken of by Dr. Provis was well known, and capable of exact diagnosis. The difficulty began when none of these conditions was present. Yet the patient might be a confirmed sufferer, her life rendered almost intolerable by constant aching pain, and we wanted to know the cause of it. He had little doubt that pain was ovarian; it only occurred during reproductive life. He considered it possibly due to the development, growth, and enlargement of the Graafian follicle and its final rupture —pain analogous to that associated with the eruption of a tooth.

Reviews.

THE GRAPHIC REGISTRATION OF HEART SOUNDS.

EXPERIMENTAL researches into the mechanism of cardiac and vascular movement have of late years been pursued in every physiological laboratory, and the graphic methods of recording these movements have been developed to an extent which would seem marvellous to former generations. Still more astonishing would it appear if the familiar sounds of the heart could also be represented by fixed and definite tracings. Many attempts have been made in this direction, and already a certain amount of success has been achieved.[1] Dr. HEINRICH GERHARTZ of Berlin claims to have devised a method whereby trustworthy results can be obtained and many of the obvious sources of error minimized. Incidentally he makes mention of the systems used by other observers, and appends a most voluminous bibliography which cannot fail to be of great use to those who may be working in the same field.

His apparatus, too elaborate for detailed description, consists essentially of a conical tube for collection of the heart's sounds, a vibrating membrane by which the waves of sound are received, the vibrations so produced being communicated to a tiny mirror connected with the membrane, which in turn throws a pencil of light upon a sensitive film, rotating on a drum. The excursions of the mirror are thus photographically recorded, and the little mirror is ingeniously suspended in a magnetic field, by means of which it is steadied. The obvious criticism of such a method has not escaped its inventor, and he provides for the elimination of the vibrations set up by the apex beat by what he terms the "open system," removing the instrument from actual contact.

The sounds of the normal human heart are not, as a rule, of sufficient volume to give more than a slight tremor by this method; but by means of an ingenious arrangement of the mirror on a lever the tracings can be magnified and present a sufficiently constant form to enable them to be recognized as forming a part of the tracings of the apex beat obtained by cardiography. Dr. Gerhartz enters very fully into the analysis of the tracings of the sounds and of the movements respectively, and by elimination of those produced by the apex beat he is enabled to gauge the duration and number of the vibrations set up by the first and second sounds respectively. His tracings confirm those obtained from movements, and show very distinctly the shortening of the diastolic period during active exercise.

Comparison with the indications of the electrocardiogram also tends to confirm the correctness of the tracing produced by sounds alone. The extreme delicacy of the apparatus employed and the liability to error in its adjustment are fully admitted. Many interesting tracings have, however, been secured in cases of valvular disease, which may point the way to further elucidation of the exact causes of the morbid sounds and to a clearer demonstration of the modification, produced by valvular defects, in the movements of the heart wall. The ingenuity of the apparatus employed and the careful analysis of the results obtained by it deserve warm recognition, and all who are engaged in cardiac research will study the very numerous tracings and illustrations with more than ordinary interest as opening up a new field of investigation which may add largely to the practical value of the knowledge that has accumulated during the last ten years.

BACTERIOLOGY IN BOMBAY.

DR. SURVEYOR'S *Report*[2] on the work of the Bacteriological Department of Grant Medical College, Bombay, during

[1] *Die Registrierung des Herzschalles.* Graphic studies by Dr. Heinrich Gerhartz of Berlin. Berlin: Julius Springer. 1911. (Roy. 8vo, pp. 166; figs. 195. M.8.)

[2] *Report on the Bacteriological and General Research Work, with Some Observations on Malaria in relation to Splenic Enlargement and the Treatment of the Crescentic Stage.* By Dr. N. F. Surveyor, M.A., M.D.Bom., M.R.C.P.Lond., Professor of Bacteriology Grant Medical College, and Honorary Physician to the Jamshedji Jijeebhoy Hospital. (From the Framji Dinshaw Petit Laboratory and Bacteriological Department, Grant Medical College, Bombay.) Printed at the Government Central Press, Bombay, 1911.

the years 1909 and 1910 contains many matters which are worth noting.

He finds that the cockroach is a carrier of living tubercle bacilli; they are found not only in the faeces of cockroaches fed on tuberculous sputum, but in insects caught in the precincts of a hospital where tuberculous patients are treated. He discovered also in the faeces of the cockroach the larval form of an echinorhynchus which in its adult form inhabits the alimentary canal of the pig, and is found occasionally in human beings. In India agar tubes rapidly become mouldy, especially in the rains, but he finds that this can be prevented by keeping them in jars together with a test tube containing chloroform, and the same device preserves sterilized dressings. The best means for sterilizing the skin and the hypodermic syringes used for vaccine treatment is a saturated solution of mercury perchloride in chloroform, but the syringe must be of the all-glass type. He was able to cultivate successfully a streptothrix of white mycetoma from two cases imported to Bombay from Cutch, on agar with the addition of glycerine 6 per cent., and glucose 2 per cent., but no growth occurred on agar containing maltose, lactose, or glucose alone. Ordinarily the streptothrix of mycetoma grows easily on simple agar. The cultures were intended to be used as vaccines, but no opportunity for their employment occurred. However, from an ulcer of the forearm of a European nurse, which had resisted ordinary treatment for two years, he cultivated a streptothrix, and after six injections of the vaccine the ulcer skinned over completely. He describes a simple and ingenious apparatus for determining the motility of the *B. dysenteriae* of Shiga. The principle of the apparatus is the transference of sterilized fluid from one Lister flask to another by capillary attraction, the tape being inoculated midway, and the test of motility is to ascertain whether the bacilli can make their way against the stream to the upper flask; the result was negative. He has used vaccine treatment in a large number of cases, and reports good results in nine cases of asthma treated with a vaccine prepared from the diphtheria bacillus. He prefers Calmette's reaction to von Pirquet's for the diagnosis of tubercle, and seems to have met with no such unpleasant results as have caused it to fall into some disfavour here. He uses antistreptococcic or antistaphylococcic vaccines in the treatment of tuberculous phthisis with fever, but when the temperature has become normal he uses very small doses of tuberculin, and reports favourable results; the doses varied from $\frac{1}{40000}$ to $\frac{1}{20000}$ mg. Of the hepatic abscesses he examined when uncontaminated, 18 out of 22 were sterile.

His observations on the epidemic of pernicious tertian fever that occurred in Bombay in the years 1908 and 1909 tend to show that the absence of enlargement of the spleen is unfavourable, and that picric acid in 2-grain doses is superior to quinine in the treatment of the crescentic stage.

The report shows that much good scientific work is being done in the laboratory of the Grant Medical College, and that the most recent applications of bacteriology are available for the treatment of disease in the great hospital of that city.

MINOR SURGERY.

MR. LEONARD A. BIDWELL'S work on *Minor Surgery*[3] is one of the volumes of the series called London Practitioners' Manuals, a series which apparently bids for favour amongst men already in practice. This book is an amplification of the author's lectures on minor surgery, delivered at the West London Post-graduate College. He interprets the term with considerable freedom, for we find that several of the gravest acute conditions of surgery usually regarded as "major," such as suprapubic cystotomy, tracheotomy, the operations for appendix abscess, and strangulated hernia, are included. The description of these procedures is necessarily short, and therefore inadequate, and their inclusion seems to detract from the merit of the book, as no practitioner would think of performing these operations with only the information here obtained. We are glad to observe that the author lays down very strict rules in the performance of the operations of minor surgery, especially in his strong insistence on asepsis. Asepsis and care are of as much importance in little things as in big things, and to the patient his disease or injury, or the operation for its relief, is always a big thing, and minor surgery well done is a great source of satisfaction to both patient and doctor. The range of minor surgery is always widening. It is no longer limited to opening abscesses, scraping sinuses, and taking off fingers. The application of carbon dioxide snow in naevi and rodent ulcer, the intravenous administration of salvarsan, and diagnostic spinal puncture are operations of minor surgery which belong to strictly modern development. None of these is omitted from this little book, and, indeed, there is much more which we must invite the reader to find for himself. The book, then, we can most cordially commend to practitioners of any school. They will find in it very many helpful suggestions, timely hints, as well as clear recognition of the fundamental principles upon which all sound surgery is based.

[3] *Minor Surgery.* By Leonard A. Bidwell, F.R.C.S., Surgeon to West London Hospital, Dean of Post-graduate College, etc. London: University of London Press, Hodder and Stoughton, Henry Frowde. 1911. (Dbl. fcap. 16mo, pp. 286; figs. 88. 6s. net.)

DR. WALTER T. DANNREUTHER tells us in the preface to his book, *Minor and Emergency Surgery*,[4] that it has been "written expressly for the members of a resident staff; for the interne's guidance when acting independently; to assist the ambulance surgeon in emergencies, to simplify practical work for the junior, and to aid the senior in some of his predicaments." Let us say at once that the achievement falls very far short of the author's ambition. The hospital interne who consults this book in the expectation of finding good guidance in minor work and sound advice for emergencies will be disappointed. It is written in scrappy, loose, unscientific style, with a few good but really superfluous illustrations. We cannot understand what place there is in such a work for a section on the sequelae of fractures, or for a short discussion, not wholly accurate from the pathological point of view, on the causes of fibrous union of fractured patella and olecranon. Nor is there any good reason for sweeping aside the classical six degrees of burns of Dupuytren and substituting the author's three. Some of the advice given is of doubtful validity; for example, paracentesis abdominis is recommended to be performed in the sitting position and in the middle line. We should have supposed that experience proved that this operation is best done when the patient is recumbent and the puncture made in the flank. When a medical prescription appears in a book in a Latinized form we expect due regard to be paid to accuracy of case, particularly the genitive; but Dr. Dannreuther's Latinity would shock a school boy, who could tell him that the genitive of the Latin words for "starch" and "alcohol" is not "amylis" and "alcoholis."

[4] *Minor and Emergency Surgery.* By Walter T. Dannreuther, M.D., Surgeon to St. Elizabeth's Hospital and to St. Bartholomew's Clinic, New York City, etc. Philadelphia and London: W. B. Saunders Co. 1911. (Demy 8vo, pp. 226; figs. 32. 6s. net.)

DISEASES OF THE SKIN.

THE last volume (ix) of ALLBUTT'S and ROLLESTON'S *System of Medicine*[5] is devoted entirely to diseases of the skin. The field of dermatology has been divided up among a number of contributors, who have dealt with the numerous morbid conditions in an able and thorough manner. Where the quality is so good and sustained throughout, it would be invidious to select any one article for particular examination. In all the sections the subjects have been brought up to date, and useful bibliographies appended, which cannot fail to be of great help to those consulting the book. Careful perusal of the volume leads to the conclusion that it will appeal to trained dermatologists, as many of the diseases dealt with have been reviewed historically and their evolution clearly made plain—important points in so involved a department of medicine as dermatology. So much for the text. But when we turn to the illustrations that is another story. Some of the figures are poor, indeed several have very little value.

In issuing the volume on the practical results achieved in the domain of venereal and cutaneous diseases,[6]

[5] *A System of Medicine.* By many writers. Edited by Sir Clifford Allbutt, K.C.B., etc., and Humphry Davy Rolleston, M.D., etc. Vol. ix. London: Macmillan and Co. 1911. (Med. 8vo, pp. 869; 2 plates; 170 figures. Price, 25s. net.)

[6] *Praktische Ergebnisse auf dem Gebiete der Haut- und Geschlechtskrankheiten.* Edited by A. Jesionek. Wiesbaden: Bergmann. 1910. (Sup. roy. 8vo, pp. 573. 18s.)

Professor JESIONEK, of Giessen, and his collaborators have done a service to these branches of medicine, for it is very necessary that stock should be taken from time to time in order to scrap exploded ideas and preserve what is of value. Such a process is all the more necessary considering the enormous amount of attention that is being given all over the world to these special departments. Taking the volume as a whole the work has been well done, the subjects dealt with being gonorrhoea, *x*-ray and radium therapy, arsenical therapy, the general treatment of skin diseases, the toxic exanthemata, the relations of diseases of the skin and diseases of other organs, the Wassermann reaction, the struggle with venereal diseases, leukaemic diseases of the skin, and eczema. These are thoroughly reviewed, and a very complete bibliography is attached to each section. In addition, at the end of the volume there is an alphabetical list of authors. Altogether the idea is a good one, and it has been well carried out by the various contributors. The practical value of the book as a work of reference is very great.

THE INDIVIDUALIZATION OF PUNISHMENT.

THE brain of this foolish-compounded clay, man, cannot vent anything that tends to prolixity more than criminologists invent, or is invented on them. They are not only prolix in themselves, but the cause of prolixity that is in other men. Here[7] the treatment of a small department of penology, which is itself but a province of criminology, is spread over a bulky volume of more than 360 pages, of which 38 are devoted to prefaces and introductions by various hands.

> If a man could ensure
> That his days would endure
> As of old, for a thousand long years,

he might be glad to beguile the tedium of such a prolonged existence by reading a work like this; but in these days of abbreviated life one is obliged to ask whether the individualization of punishment—that is to say, making the punishment fit the criminal rather than the crime—cannot be understood without going back to the communal punishment of barbarous tribes, the provisions of the Salic law, and the discussion of what Boswell calls the excruciating problem of free will and determinism. The consequence of diluting the subject in this overwhelming flood of words is to render it at once insipid and innutritious. We must hunt for the needle of positive teaching in a haystack of accreted and not very relevant matter, and when we have found it, it amounts to this: that the duration of the sentence should depend on the character of the crime, but the nature of the punishment inflicted during the sentence should depend on the character of the criminal. This is all very well, but we are not told how the character either of the crime or the criminal is to be estimated. Murder is murder, whether it is committed from jealousy, from revenge, from greed, or from other motive. Is its character the same or different in the several cases? And how is the character of the convict to be known? and if it can be known, what elements in it are to determine the nature of his punishment? Is the prisoner who is neat and vain of his personal appearance to be dressed unbecomingly and kept dirty? Is the methodical man to be compelled to adopt irregular habits? M. SALEILLES classifies criminals according to their "psychological nature." Whether this is the same as character he does not tell us, but presumably it is; and he discovers three classes: "The one is that of the origin or source of the criminality—such as atavism, degeneracy, influence of the environment . . . the second is that of the type of criminality; such are the wanton, the crooks, the depraved, and many others. . . . Finally, for each of these types, there are those amenable to reform and the incorrigible." Most people would see in this classification, not three classes, but four; but, granting that they are but three, the mind contemplates with awe the spectacle of a judge deciding the question of imprisonment or penal servitude by considering whether the criminality of the convict is due to atavism, to degeneracy, or to the influence of environment; whether the prisoner is a wanton, or a crook, whatever that may be, or is depraved. This may be very good criminology, and, as Professor Galbriel Tarde and Professor Roscoe Pound unite in high appreciation of Professor Saleilles, we suppose it is, but it only confirms us in our suspicion that criminology is a most unpractical science, and criminologists most visionary people.

[7] *The Individualization of Punishment.* By Raymond Saleilles, Professor of Comparative Law in the University of Paris. With Introduction. Translated by Rachel Jastrow. London: Heinemann. 1911. (Demy 8vo, pp. xliv, 322. 16s. net.)

HEALTH AND EMPIRE.

MOST people think parochially, few imperially. More particularly is this true in matters relating to the health of the empire. Dr. FRANCIS FREMANTLE is one of the few, as is amply shown in his volume, *A Traveller's Study of Health and Empire*,[8] which he has appropriately dedicated to that statesman-pioneer of empire, the Right Hon. Joseph Chamberlain.

"Health to a nation is as vital as good material to an engine, as exact alloy to a coin," and "Health is possible without education, but education is impossible without health. And so, for mere national efficiency, the public health is of all things most important," are sentences which serve to act as texts for the lessons with which the volume is filled.

The author gives us a world-wide survey of matters relating to health and disease, well written and marked by plenty of sound common sense. He tells of the efforts being made to combat disease in India, China, Japan, and the United States.

Very interesting are the accounts given of the plague in India, and of the Pasteur Institute at Kasauli under Colonel Sir David Semple, and incidentally a well-merited tribute is paid to the pioneer work of Haffkine. It is probable that few of us at home fully realize or appreciate the enormous amount of work in the line of preventive medicine and of bacteriological investigations which is being carried on, often with but too little official recognition, in our Far Eastern possessions; to all such Dr. Fremantle's book will be most instructive. The direct commercial value of such institutions can, as Dr. Fremantle writes, hardly be exaggerated, and he makes the suggestion that "a brief account of comparative animal and vegetable pathology, and some practical experience of a herbarium and a veterinary hospital" should be included in the instruction given in academic centres to those seeking the higher medical degrees.

A very interesting chapter is that dealing with the Red Cross Society in Japan and its relations to the Army Medical Corps both in war and peace. There are lessons we may learn from this practical nation. What is most striking is the great public interest taken by all classes of Japanese in the Red Cross movement, and their unbounded patriotism. A continuous, steady effort, and no mere spasmodic enthusiasm when war is imminent.

The book is of interest for all classes of readers, and it may be particularly commended to the notice of the anti-vivisectionists and to some politicians; it will afford much food for reflection. Politics, Eastern religions, national characteristics are among other subjects interestingly dealt with and discussed.

The real aim of the book is to show the necessity for viewing the health of the empire as a whole, for imperial health is an imperial asset. A plea is advanced for the formation of an imperial general staff to attend to all such matters, to co-ordinate information received from all parts of the empire and to render such information quickly and easily accessible. Such information is shown to be of enormous economic as well as scientific value.

[8] *A Traveller's Study of Health and Empire.* By Francis Fremantle, County Medical Officer of Health. London: John Ouseley, Limited. 1911. (Med. 8vo, pp. 381; 16 illustrations. 7s. 6d. net.)

THE PREVENTION OF DESTITUTION.[9]

THE report of the proceedings of the public health section of the National Conference on the Prevention of Destitution, held at the Caxton Hall last May and June, contains some extremely valuable material on various questions at present exercising the medical profession. In the prefatory statement we are told that it is officially estimated that from one-third to one-half of all the public expenditure in the relief of destitution is due to sickness, and one-seventh of it to tuberculosis alone. So far as statutory form goes,

[9] *National Conference on the Prevention of Destitution, 1911: Report of the Proceedings of the Public Health Section.* London: P. S. King and Son. (Pp. 238. 2s. 6d. net.)

the powers available to public health authorities for the prevention of disease appear to be ample, but experience shows that much that is merely optional is not put in force, and even what is nominally compulsory is often not in existence. There are in England and Wales about 1,800 local sanitary authorities, which, together with the county councils, have about 1,500 medical officers of health. Out of these about 350, including those of London, the county councils, and county boroughs, are salaried full-time officers, while about 400 are private practitioners receiving stipends of £3 to £30 a year. Out of the 1,800 local health authorities only about 700 have any sort of hospital provision of their own for infectious diseases, but the 700 municipal hospitals have over 25,000 beds, which is more than those provided by all the endowed and voluntary hospitals put together. They receive about 100,000 patients a year, and, as they can legally provide for every kind of disease, some of them are beginning to admit patients suffering from accident, tuberculosis, measles, whooping-cough, and so on, and a few are opening out-patient departments for tuberculosis, ringworm, and various skin diseases. A return is given showing the number of health visitors in the kingdom, and it appears that in February, 1911, there were 471 salaried visitors, of whom 350 were paid entirely out of the rates, and 964 voluntary health visitors.

It would be invidious to pick out for special notice any single paper read before the Conference. Perhaps the subjects of most immediate interest at the present time were the medical treatment of school children, sickness and invalidity insurance, and the discussion on the need for a unified medical service, but great interest was shown in the question of the administrative control of tuberculosis and the work of the public health authority in relation to birth and infancy. The papers were of an unusually high order of merit, and many of them bore evidence that they had cost the writers a considerable amount of time and trouble in the collection of statistics. The book is well worth getting, as it contains much of permanent value.

NOTES ON BOOKS.

TILLMANNS'S well-known textbook on surgery[1] has reached its ninth edition and deserves its well-earned popularity. This edition is considerably enlarged and improved. The text includes numerous references and quotations from other works, but some of the descriptions are surprisingly brief—for example, that of Paget's disease of the nipples is condensed into thirty lines. The surgery of the stomach, intestines, rectum, and anus is carefully handled and is sufficiently detailed. The same applies to the chapter on hernia. The illustrations are numerous and many of them are coloured. Some are somewhat primitive, but serve their purpose well. The book will be found one of the best textbooks for general reading, both for students and practitioners. It does not render special works superfluous, but serves as a safe groundwork. The index is weak, which is a pity for a book of this size and importance.

Mr. G. SUTHERLAND THOMSON'S *Milk and Cream Testing*[2] is a work in which the author's intentions are clearly much better than his performance. In an introduction from another pen it is stated that "the ideal conditions of theory and practice are combined in every chapter and in every line," and that the author "has conferred an incalculable benefit upon the dairy industry throughout the world by the publication of this little book"; but a study of the text quite disappoints the expectations thus aroused. The author is entirely in favour of the application of sound scientific knowledge to all stages of dairying; but he fails to give clear and definite information on nearly every subject discussed. The book may do some service in directing the attention of persons connected with dairy industries to the need for more knowledge than many now possess.

Volume v, No. 3, of the *Annals of Tropical Medicine and Parasitology* contains some highly-instructive and interesting articles by workers of the Liverpool School of Tropical Medicine and others. Professor Sir Ronald Ross and Mr. Stabb contribute a paper on statistical error, Dr. Seidelin a paper on some blood parasites in reptiles, Dr. Graham a paper on an investigation of the effects produced upon the excretion of urinary pigments by salts of quinine, and Dr. Yorke an article on the passage of haemoglobin through the kidneys; Dr. Wise gives the results of an examination of the city of Georgetown, British Guiana, for the breeding places of mosquitos, and Dr. Robert McCarrison records a second series of experiments dealing with the transmission of goître from man to animals. Dr. Stephens has a note on a new species and genus of monostome fluke, and there are further articles on human trypanosomiasis and spirochaetes and on a new blood-counting pipette. Much useful information will be found in the volume.

The task imposed on Mr. H. H. STEPHENSON, the editor of the new publication, *Who's Who in Science*,[3] was certainly formidable, for the book purports to give an account of every person who has attained distinction in any branch of science, irrespective of nationality. The result is a volume containing some 4,000 short biographies, which include those of men more or less distinguished in connexion with medicine and surgery. Their number is indeed large as compared with adherents of other branches of work. The impression is left, however, that so far as Great Britain is concerned the inspiration as to the choice of names was not always happy; and the fact that the Swiss list, though longer than that of France, contains the names neither of Kocher nor Roux tends to produce a similar impression. Nevertheless, this book of reference will doubtless prove highly useful to a large number of persons.

[1] *Lehrbuch der speziellen Chirurgie.* Von Geheimer Medizinal Rat Professor Dr. Hermann Tillmanns. Ninth edition, enlarged and improved, freely illustrated; in 2 vols. Leipzig: Veit and Co. 1911. (Sup. roy. 8vo. Price M. 55.)

[2] *Milk and Cream Testing and Grading Dairy Products.* By G. Sutherland Thomson, F.R.S.Edin., B.D.F.A. Diploma, and N.D.D. With an introduction by Samuel Lowe. London: Crosby Lockwood and Son. 1911. (Post 8vo, pp. 224; 72 illustrations. 4s. 6d. net.)

[3] *Who's Who in Science* (International), 1912. Edited by Mr. H. H. Stephenson. London: J. and A. Churchill. (Demy 8vo, pp. 323. Price 6s. net.)

MEDICAL AND SURGICAL APPLIANCES.

Arm Slings.

THE Sanitary Wood Wool Company, of Thavies Inn, E.C., has brought to our notice an arm sling to which they think might be applied the description given of the "Minn sling" at page 497 of our issue for March 2nd. The term there applied, however, was "fan-shaped," while the shape of the sling forwarded by the firm in question is strictly triangular, and differs from a ready folded Esmarch sling only in the fact that the extremities are drawn out into narrow bands sufficiently long to allow of their being crossed behind the shoulder blades, then brought forward round the waist, and there tied or buckled together. On the other hand, the two slings closely resemble one another in being easily applicable to either arm and in the firmness and sufficiency of the support they supply to an injured arm. The Wood Wool Company's sling was brought out, it appears, some ten years ago, and costs, with buckle attachments, when made of calico, 1s. 3d.; and 3s. when made of black satin. It is known as the adjustable arm sling.

Ammonium Chloride Inhalation.

Messrs. Burroughs Wellcome and Co. have recently brought out an ingenious appliance for use in connexion with their vaporole ammonium chloride inhaler. Its object is to permit of the vapour being inhaled through the nares and expelled through the mouth, as well as vice versa. This is effected by the provision, not of bulbs for insertion into the nostrils, but of a kind of glass funnel with flanged edges, so shaped as to fit the configuration of any face and yet permit of the vapour passing freely. The plan is both cleanly and sound, and the attachment renders still more useful an inhaler which from the beginning offered distinct advantages over many of its congeners in respect of facility of use and constant neutrality of the vapour supplied.

MEDICINAL AND DIETETIC PREPARATIONS.

Concentrated Diphtheria Antitoxin.

MESSRS. BURROUGHS WELLCOME AND CO. are issuing a preparation of concentrated diphtheria antitoxin. It is prepared according to the latest methods of salt precipitation. On account of its concentration large doses can be given in comparatively small volume. It is issued in hermetically sealed phials of 1,000, 2,000, 3,000, 4,000, and 5,000 Ehrlich-Behring units, each 1,000 units being contained in 1 c.cm. or less of fluid.

RADIUM EMANATION (NITON) IN THE BATH WATERS.

THERE hangs in the grand pump room at Bath an original *Punch* drawing by Mr. E. T. Reed, portraying the disgust of Beau Nash (otherwise Bone Ash, or calcium phosphate) on finding that, in spite of the most stringent and exclusive rules, Monsieur Radium, a little parvenu, is also present in the thermal springs of Bath. Evidently the drawing commemorates the investigations of ten years ago by the Hon. R. J. Strutt, who found a trace of radium in the iron deposits left by the waters of the hot springs as well as in the water itself. That was the first episode in the new scientific investigation of the hot mineral waters which, for hundreds of years, if not from the fabulous days of Bladud, have been famous for their healing properties. The second episode took place as recently as March 11th, when Sir William Ramsay, who devoted his holidays last Christmas to a thorough study of the wells, presented his report thereon to a public meeting of the Bath Corporation and citizens.

Bath made the most of the occasion, evidently realizing its bearing upon the projected extension of the baths. "The *élite* of Ba—th," to infringe the copyright of Angelo Cyrus Bantam, Esquire, were assembled in the grand pump room. The medical profession was strongly represented. Among those on the platform were Sir James Mackenzie Davidson, Dr. R. J. H. Scott, Chairman of the Bath Division of the British Medical Association, and Dr. James Taylor, of Bristol, together with the Mayor (Alderman Forder Plowman) and other public men.

It was a far cry from Sir William Ramsay's extremely technical exposition of the contents of the waters to an old poet's analysis, also to be found in the pump room:

> With sulpher fylde, and other things,
> Wylde fyre, saltgem, salte peter eke,
> Salte armoniake, salte alchime,
> Salte comune, and salte arabecke.
>
> Salte niter mixid with the rest. . . .

But perhaps the "wylde fyre" is a prophetic description of Sir William's "niton," which he finds in remarkable volume in the gas of King's Well.

Sir WILLIAM RAMSAY recalled the fact that it was in the escape from this King's Well that Lord Rayleigh, soon after his own discovery of helium, found this lightest of gases to the amount of 12 volumes in 10,000. But helium, forming no compounds, had no therapeutic action, and, in spite of this discovery, the reason for the beneficial effect of such waters remained obscure. The ordinary chemical analysis of the Bath waters, as in the case of certain other spas, revealed few remarkable constituents. Some mineral waters contained sulphur, others were ferruginous, a few gave lithium, which might have some medicinal action, probably on calculus, while certain of them, including those of Bath, had a trace of arsenic. Otherwise the only unusual constituents of the Bath waters, as given in the recorded analyses, were small quantities of strontium, of lithium, and a trace of bromine. It was not easy to see how water containing in the main ordinary sulphates of calcium, of sodium, of potassium, and carbonates of calcium and magnesium, could possess very marked medicinal properties. This problem, however, came near elucidation when he found, in collaboration with Mr. Soddy, that helium was one of the products of radium change, and that its presence in the water was an indication that radium had been concerned in its production. If helium were present, radium was either in the water or the water had been in contact with radium.

NITON (RADIUM EMANATION).

Sir William proceeded to give a summary of the chemistry of radium, which the frequent expression of his individual opinion made more than usually interesting. The advent of radium, he said, had compelled a revision of current ideas of an element; it was no longer the final, unresolvable material. Chemists of note had always made a reservation in this matter, and such a reservation was a just one. Radium, although an element, changed into other elements, one of which was helium, and the other, consisting of that which was left of the radium after the helium or the alpha particle had been shot out, was the radium emanation, or, as he preferred to call it, niton. The emanation must be regarded in a certain sense as an element. It behaved as a form of matter, had some stability, and lasted for a definite time; and since the mapping out of its spectrum and the investigation of its atomic weight, which corresponded to that of radium less the atom of helium, it was better called "niton," from the Latin word meaning "to shine." Like argon and helium, this gas was inert, forming no chemical compounds, and its life, which in order to avoid the infinitesimal was expressed in half-periods of decay, was 3.86 days. It was much more potent, weight for weight, than radium. It could be converted into a liquid at an ordinary temperature by compression alone, and the liquid could be seen in a tube with as fine a bore as that of a clinical thermometer. On cooling it froze into a kind of ice, and made the glass or silica in which it was confined glow like a miniature arc light. Its products were mainly solids, radium A, B, C, and D, which were probably of the nature of metals.

The waters at Bath contained a trace of radium and a considerable amount of niton. The most satisfactory way of expressing the value of the niton was to give the amount of radium with which it would be in equilibrium. It was necessary to keep in mind the fact that radium had a very slow period of decay and niton a very fast period. If a solution of radium were freed from niton by boiling, it would be possible to boil all the gas away, but the radium would begin to gather niton again. This process of accumulation, however, would only go on to a certain point, that point being 0.6 c.mm. of niton. The reason why the accumulation could proceed no further was because the niton itself was decomposing and changing into radium A, B, C, and D, with the consequence that after about thirty days the radium would have produced as much niton as it could. When the rate of production was equal to the rate of decay there was a condition of balance, and the figures which Sir William produced gave, not the amount of niton, but the amount of radium with which niton would be in equilibrium. For the purpose of a standard, he thought it desirable to give the results as though the water contained the actual radium, even though none were present, but only niton.

Weights of Radium Capable of Forming the Niton Present in a Million Litres of Water or Gas.

Niton (radium emanation) in King's Well	1.73 mg.
Niton (radium emanation) in Cross Bath	1.19 ,,
Niton (radium emanation) in Hetling Bath	1.70 ,,
Niton (radium emanation) in gas from King's Well ...	33.65 ,,

The amount of radium in the water of King's Well was 0.1387 mg. per million litres, perhaps equal to a grain or two of salt in a quarter of a million gallons. He expressed himself greatly surprised at the amount of niton which issued from the gas at King's Well. The figure in a million litres was 33.65 mg., not of radium, but of emanation in equilibrium with that amount of radium.

Gases of the Bath Waters.

Density of the water from King's Well ...	1.0166
Osmotic pressure, equivalent to that of a salt solution containing per litre ...	1.09 gram NaCl
Volume of gas in 24 hours from	
King's Well...	4,927 litres
Cross Spring	218 ,,
Hetling Spring (estimated)	218 ,,
Analysis of gas (King's Well), parts per 10,000:	
Carbon dioxide	360
Nitrogen, etc.	9,640
No oxygen; no hydrogen; no marsh gas	
The nitrogen contains:	C.cm. per 10,000 parts.
Argon	73.63
Neon	23.34
Helium	2.97
From all three wells in 24 hours:	
Argon	39 litres
Neon	12½ ,,
Helium	1½ ,,
Gases dissolved in pump room water:	
The water contains 18.5 volumes of gas per 1,000 of water.	
Composition (allowance having been made for aëration):	
Carbon dioxide	6.9 volumes
Nitrogen	11.6 ,,

In commenting upon these figures, Sir William said that it was very curious that while radium emanation present in the water had the power of decomposing it into oxygen and hydrogen, yet there was no oxygen in the gas of King's Well. He confessed himself unable to account for it and did not know where it had gone. He tested the gas very thoroughly for hydrogen and marsh gas and found neither to be present. The total volume of gas, which fluctuated somewhat with the barometric pressure as well as with the amount of pumping, reached the very considerable figure of over 5 cubic metres in twenty-four hours. The amount of neon present was astonishing. While the argon in the gas had only the ratio of 0.78 as compared with the amount of argon present in an equal volume of atmospheric air, the amount of neon was 188 times greater in the gas collected from King's Well than in air, and the helium on a similar basis was about 73 times greater. He suggested that neon now had its commercial uses, and that it could be separated without difficulty from the bath gas if there proved to be a sufficient demand. The immediate point of interest was that neon and helium arose out of the decomposition of radium, or of one of its products below ground where the gases were generated.

Comparisons with Other Waters.

It was difficult, Sir William proceeded, to compare the radio-activities of various waters over a wide area. The measurements at Continental spas were carried out by means of an arbitrary unit, and the absence of a uniform standard made proportionate estimates out of the question.

Comparison with Buxton.

BATH—	Niton, Mg. per Million Litres.
King's Well (water)	1.73
Hetling Well (water)	1.70
Cross Bath (water)	1.19
Gas from King's Spring	33.65

BUXTON—	Niton, Mg. per Million Litres.
Hospital Natural Baths (water)	0.83
Crescent Pump Room (water)	0.83
Gentlemen's Natural Baths (water)	1.1
Buxton natural gas	7.7 and 8.5

The niton in the natural gas, therefore, was four times greater in Bath than in Buxton. As a result of some intricate calculations with the gas in the case of the wells at Bath, he affirmed that in the daily output of 5,363 litres the niton was equal in effect to the gas produced from one-fifth of a milligram of radium.

These figures appeared ridiculously small, but considerable changes had been produced by radium in comparable quantities, and the effect of radium was due to radiations of exceedingly great intensity and very penetrating. Only the previous week, in the *Comptes Rendus* of the Académie des Sciences, a chemist, making experiments with a particular kind of mould, found that if a weight of manganese equal to only half a millionth of the amount of ash were added that mould would double in weight within a certain period, and if this infinitesimal quantity were omitted it would not. Another example was afforded by myxoedema, which was due to deficiency of thyroid gland secretion. Thyroid secretion was proved to contain arsenic and iodine, yet none of us were aware of taking either of these substances in our food. Nevertheless, they must be taken, otherwise the thyroid gland would not secrete a suitable material, and the result of that lack would be myxoedema. The amount of arsenic and iodine was ridiculously small, but physiologically intense.

Employment of Bath Waters and Gas.

The final considerations related to some methods of more effectively employing the waters and the natural gas as a therapeutic agent. Experiments on mice and kittens which he had made in conjunction with Dr. Stevenson of University College Hospital, made it plain that after the administration of a solution of niton, either with food or by means of an injection, the gas was chiefly breathed out of the organism, little trace of it remaining after three hours, and none at all after twelve. No physiological effect was noted in these experiments save, in the case of the kittens, some inflammation of the mucous membrane of the stomach. Evidently niton had a certain corrosive action, but not within the limits of such small quantities as would be available in the Bath waters. He thought that the beneficial action would be more vivid if the natural gas escaping from King's Well could be injected, for the gas was much richer in niton than the water. Already there was in employment at Bath an ingenious spraying arrangement for throat affections. It was fed with air, or with air and steam, carrying with it the natural water. He suggested that the gas be used for the purpose, thus enlisting an agent more than twenty times as potent. The spray produced by forcing the gas under pressure through the water could be employed directly against the skin, and might prove efficacious in the treatment of local rheumatism. The chances of absorption would be increased if the patient were insulated and connected with the negative pole of a battery, but he advised caution in any arrangement for breathing such a spray, although the effective absorption by the lungs would no doubt be rapid.

An increased skin absorption might be effected by placing the patient in an electric bath and connecting him with the negative pole of a battery of 100 volts potential, the other electrode being placed in the water. The electrons or the negative electricity from the disintegration of the niton became positively charged in the discharging process, and would therefore be attracted by a negatively charged body. Thus, on the same principle as in ionization, the patient would attract these positively charged particles, and their concentration on his skin would most likely be followed by entrance into his organism. Even if the niton in the bath amounted to $\frac{1}{1000}$ mg., and the whole of it were absorbed by the patient, no apprehension need be felt as to possible danger. The apparatus, he added, would necessitate the substitution of continuous for alternating current, seeing that the latter, while producing electrical stimulus, prevented by its rapid reversal any concentration of niton on the skin.

Would it be possible for patients to breathe niton? The total quantity available in the gas from King's Well in twenty-four hours was the equivalent of about 0.17 mg. of radium, and would represent a little more than the thousandth of a milligram per cubic yard in a room of 15 cubic feet. The ventilation would be defective, he feared, if it were arranged for the niton to accumulate in a room in which people would assemble to breathe it, and some spraying method would be preferable.

Questions.

He was asked whether it could be said that the water was saturated. He replied in the affirmative. The gas coming from the water contained much more niton than the water itself, and therefore the water contained as much niton as it would hold at the very high temperature of about 120° F., to which it was raised in Nature's cauldron. It was saturated in the sense that while there was a tiny amount of emanation in the gas and an enormous amount of nitrogen, the former was taken up to the full extent possible.

Another question related to the daily value of radium in Bath. About £6 worth, said Sir William Ramsay, was contained in the hundreds of thousands of gallons of water that daily went down into the Avon. But it was not wealth, because it could not be got out. It could be used but not extracted. Asked whether it would be possible to separate the niton from the natural gas, he replied that it would, but he thought on the whole it would be cheaper to buy some radium, separate the gas from it as it accumulated, and use that for mixing with the water.

Vote of Thanks.

In proposing a vote of thanks to Sir William Ramsay, Alderman C. BRYAN OLIVER, Chairman of the Baths Committee, referred to the lustre of the drinking glasses—"a number of yellow-looking tumblers," as Dickens called them. He elicited from the scientist that this was due, not to the iron in the water as hitherto supposed, but entirely to the radium. Even the discoloured appearance of the baths had now a new preciousness. Dr. SCOTT seconded the vote of thanks, and said that a most valuable line of work had been pointed out to the medical profession of the city. Sir JAMES MACKENZIE DAVIDSON in supporting the motion, remarked upon the German investigations into the effect of radium emanation upon rheumatism and gout. With an appropriate eulogy of Sir William Ramsay's investigations by the MAYOR the proceedings concluded.

THE REPORT OF THE CHIEF REGISTRAR OF FRIENDLY SOCIETIES.

THE annual report of the Chief Registrar of Friendly Societies for the year ending December, 1910, contains some statistics that are of interest in connexion with the National Insurance Act. Though the report is for 1910 it is dated November, 1911, and makes reference to certain matters relating to 1911.

The new societies registered during 1910 numbered 1,026, including 94 new friendly societies and 402 new branches of friendly societies, 143 working men's clubs, 204 industrial and provident societies, and 24 trade unions, with various other societies. No less than 558 friendly societies and branches were removed from the register during the year, some of them at their own request and others compulsorily. The extent of the work of the office of Chief Registrar is shown by the fact that the total annual returns received in 1910 number 31,223, of which 6,061 were from friendly societies, 141 from friendly society orders, and 18,232 from branches of orders. The total number of branches of orders at the end of 1910 was 18,429.

Friendly Societies.

The collecting societies are evidently one of the most important classes, for, although they are relatively few in number (52 in England, 6 in Scotland, and 2 in Ireland), they represent a membership of 6,829,000 persons, their income exceeds £3,208,000, and their accumulated funds are £9,117,000. By far the largest are the Liverpool Victoria Legal Friendly Society with 2,615,258 members and the Royal Liver with 2,394,166. The average contribution in the collecting societies is about 8s. 7d. a year, and out of every £1,000 outgo, £511 is applied to management expenses, £444 in sums at death of members or their children, £4 in sickness pay, £35 in other benefits (mostly endowments), and £6 in other payments (chiefly cash bonuses). The extremely high proportion of the expenditure that goes in management expenses, 51 per cent., is, of course, due to the cost of the house-to-house collecting of contributions, and members are apparently quite willing to submit simply for the sake of the convenience; in spite of this high cost, the returns of a large number of societies show a deficiency in the management funds, which have been met by applying the benefit funds towards the cost of management.

With regard to the quinquennial valuations, there were 3,464 returns sent in from friendly societies and branches, 804 being from friendly, collecting, and specially authorized societies having a total membership of 5,904,093. Of these societies, 521 showed deficiencies that amounted in the aggregate to £1,707,653, and 283 had surpluses amounting to £997,853, so that there was a net deficiency of £709,800. From this it will be seen that 65 per cent. of the societies had deficiencies and only 35 per cent. surpluses, and, taken collectively, the societies were in a position to pay only 19s. 8d. in the £ of their future liabilities. It is stated that in most cases where deficiencies were shown they had arisen from premature distribution of cash bonuses or increase of benefits which the society was not in a position to afford.

The approximate average age of the members was 30 years, no fewer than 1,360,617 members being under 15 years of age, and only 175,358 over 65 years of age. The last figure is of interest in connexion with Clause 15 (2) (*e*) of the Insurance Act, under which the British Medical Association agreed to attend, at the same rate as insured persons, those existing members of friendly societies only who at the commencement of the Act will be over 65 or permanently invalided and so not able to become insured persons, though their societies are still liable to provide them with medical attendance during their lives. After the insertion of this subsection in the Act, the Government agreed to admit to insurance on special terms persons over 65 who are engaged in some employment within the meaning of the Act, so that the figure 175,358 must be reduced, probably to about 130,000, in order to estimate the number of persons to whom the subsection will apply. To this, however, must be added the permanently invalided under 65 years of age, and making an estimate from figures that are available from a few societies, these will, perhaps, reach 60,000 or 70,000. Roughly, therefore, it may be expected that the subsection will apply to a total number of about 200,000, or 1 person to every 75 of the insured. This number will, of course, rapidly diminish, insomuch that in five years it will probably be not more than 70,000 to 80,000, and in ten years probably not more than 20,000 to 30,000, while in twenty years extremely few will remain.

In 522 instances, or 65 per cent. of the total number of valuation returns, the valuers have compared the actual cost of sickness claims with the estimated cost according to the standard sickness tables. The cost, estimated from the tables, was £547,510; but the actual cost was £567,231, or 3.6 per cent. more than the anticipated cost. In some cases the actual cost was as much as 85 per cent. more than the anticipated cost, while in others it was 66 per cent. less. Only 15 per cent. of the societies used the sickness tables of the Manchester Unity, which the actuaries of the National Insurance Act used, and as these tables show a higher sickness expectation than other tables for every age except children, it is evident that this was a far safer standard than the great bulk of the friendly societies themselves take.

Five schemes were registered under the Workmen's Compensation Act for arrangements between workmen and employers, all of them being administered by the Bristol Channel Ports Mutual Friendly Society. Under these schemes the workmen pay 4s. 4d. a year and the employers not less than 12s. 6d. per £100 gross wages paid, the object of the scheme being partly to prevent litigation about claims and partly to provide a larger amount in case of accident than the Compensation Act itself would allow.

Trade Unions.

The total number of trade unions was 638, with a membership of 1,957,904, an income of £3,042,421, an expenditure of £3,158,698, and total funds amounting to £5,886,272. Fully two-thirds of the members belonged to the 43 leading unions, of which the largest is the South Wales Miners' Federation with 141,089 members, the next in order being the Durham Miners' Association with 117,318, and the Amalgamated Society of Engineers with 107,140. The last named, though it is only third on the list in number of members, has by far the greatest income and accumulated funds. Of the 24 new unions registered in 1910, 7 were unions of employers. About 80 of the unions, with a membership of nearly 200,000, have definitely decided to join the "approved" section of the General Federation of Trade Unions, with a view to becoming approved under the Insurance Act. The benefits given under the Act are, of course, very different from those provided by the unions, and the following statement of the way in which the funds of the trade unions are spent will allow of a comparison: Out-of-work pay amounts to 29.9 per cent. of the total expenditure, dispute pay 8 per cent., sickness pay 13.9 per cent., superannuation 11.5 per cent., sums at death 4 per cent., accident pay 3.3 per cent., other benefits 3.3 per cent., contributions to other unions 3.6 per cent., other expenditure 3.2 per cent., and management expenses 19.3 per cent. Only comparatively few local branches provide medical attendance, and these generally keep the medical funds separate. It may be noted that the management expenditure in the National Insurance is reckoned at

General Summary of the Societies dealt with by the Chief Registrar.

	No. of Returns.	Members.	Funds.
			£
Ordinary friendly societies	6,368	3,526,639	20,987,352
Orders and branches	20,728	2,703,607	27,167,535
Collecting friendly societies ...	63	6,829,164	9,117,347
Medical societies	85	323,755	59,937
Shop clubs	8	13,365	1,347
Benevolent societies	73	29,965	360,507
Working men's clubs ...	1,142	294,005	425,239
Specially authorized societies ...	192	78,175	814,146
Industrial and provident societies ...	3,110	2,777,513	60,597,446
Trade unions	638	1,957,904	5,886,272

about 14 per cent., this comparatively low figure being due to the facts that there will be no cost for collecting contributions, and that the cost of audit and valuation will be borne by the Treasury.

In addition to numerous other societies may be specially mentioned the Post Office Savings Bank, with 7,913,295 depositors, and deposits amounting to £186,236,185; the Railway Savings Banks, with 67,614 depositors and £6,362,209 deposits; and the Trustee Savings Banks with 1,804,895 depositors, and £64,458,540 deposits. The grand total of Registered Provident Societies and Savings Banks, including all the above-named societies and others, shows a membership of 29,226,926, and funds of £459,753,790.

Dominions and Colonies.

An appendix to the report gives some account of friendly societies in the Dominions and Colonies. In Australia there are 184 separate societies and 4,264 branches, with total membership of 389,054 and funds £4,850,682; while in New Zealand there are 44 societies and 567 branches, with 64,428 members and funds £1,266,297. It is interesting to note the comparatively large proportion of the expenditure of the societies on medical attendance and medicines. Taking the friendly societies proper in New South Wales, their total expenditure was £378,168, of which sick pay accounted for £105,832, funeral benefits £25,706, medical attendance and medicines £122,327, management expenses £49,831, the balance being for other items of expenditure. The amount for medical attendance and medicines represents an average cost of £1 4s. 7d. per head of mean adult membership entitled to benefit, while sick pay only averaged £1 1s. Somewhat similar figures are given for Victoria, where sick pay amounted to £131,034, funeral benefit £28,880, and medical attendance and medicines for members and their families cost £130,500. In Queensland also the amount for medical attendance and medicines averaged almost the same per member as in New South Wales. The fees paid to the medical officers are not stated, but it appears that the sums of £1 4s. 7d. in New South Wales, and only slightly less in Queensland and Victoria, paid for medical attendance and medicines are the annual average per family of the members; some of it may be for hospital treatment.

In Canada (Ontario) the medical attendance cost only £14,406 for 99,411 members, which is less than 3s. per head per year. This is evidently for members only, no provision being made for families, as it is generally in Australia. In the Bahamas, where there are 160 societies with a membership of about 8,000, two curiously primitive customs prevail. The societies justify their title to the name "Friendly Societies" by the fact that in nearly every society there is a rule compelling two members to take care during the night of any member who is seriously ill, while in the day the Sick Committee visit or other members are sent to render assistance, the members who perform these services being chosen in order from the list. Another custom is to charge all members the same contribution whatever their age at entry, and only very few societies require a higher entrance fee from persons joining after the age of 40. The risk thus incurred is met by simply reducing the sick pay whenever the managing committee thinks the cash in hand has been reduced to a dangerous degree. Actuarial tables seem hardly to be understood by most of the officials of the societies.

SCIENCE NOTES.

AMONG the most remarkable developments of biology in recent times, those connected with the artificial fertilization of the ovum and the cultivation of mature cells in artificial environments must take a foremost place. Loeb has not yet fully succeeded in revolutionizing our views in regard to the fundamental conditions of life, nor have any of his fellow-workers been able to demonstrate that the essential cell can arise in a manner other than that in which Nature has presented it to us. Nevertheless, it may be that we are at the dawn of a new biological era, in which we may possibly have to revise all our doctrines connected with living cells. The work of Harrison and Alexis Carrel has materially contributed to bringing about this change. They have succeeded in cultivating cells which belong to the body outside the organism, and they claim that the characteristics of the initial cells is maintained in the cultures. They worked with normal cells of various animals, both in mature and in embryonal stages, and also with the cells of malignant tumours. It is noteworthy that these studies appear to have been undertaken more in order to establish new facts regarding malignant cells than to further knowledge of the actual biology of the various cells. Dr. S. Hadda, working in Breslau, has made some interesting observations in this direction, which are worthy of record, even if the deductions which may be drawn from them are not of far-reaching importance.[1] He started his series of experiment with cells taken from fowl embryos 14 days old. Of 105 cultures, 73 grew, while failure in 4 was attributed to faulty technique. The growth was most constant with cells of the skin and spleen, and least so with those of the brain. He then turned his attention to adult dogs, with which he obtained less good results. Only 8 of 35 cultures showed the characteristics looked for. On the other hand, he got 11 positive results out of 27 when working with rabbit tissues. The culture medium selected was that recommended by Carrel, namely, the plasma of the animal whose tissues are to be cultivated or that of another individual of the same species. The necessity of the exclusion of air and of rapidity of work are details which need scarcely be mentioned here. On turning his attention to human malignant cells, he met with failure, both with cases of carcinoma and of sarcoma, and noted that after the coagulation of the plasma had taken place, a subsequent liquefaction occurred. This was also found in dealing with normal human cells. Other investigators have noted this, and have ascribed to it the failure to cultivate cancer cells. Hadda found a means of overcoming the subsequent liquefaction of the medium, namely, by adding to the specific plasma the plasma of the rabbit, but even in this no growth ensued. The cells of rabbit grew well in a mixture of fowl and rabbit plasma. Carrel claims to have succeeded on rare occasions in his attempts with human malignant cells. Hadda, however, failed in each attempt with human cells, both normal and pathological. While he regarded the phenomena in the medium as true growth of cells, he failed to recognize anything approaching a retention of the cell arrangement of the original tissues from which the cells were derived. He describes the growth as quite irregular. He mentions a point of interest and importance which he has not yet included in his series of experiment. It is the behaviour of the cultured cells after they have been reintroduced into the organism of the animal from which they have been obtained or one of the same species. The fact that the growth only takes place in continuity with the piece of tissue implanted into the medium, and does not extend to cells which have become detached from the central piece, is significant.

On the occasion of their March meeting, the members of the Roentgen Society paid a visit to the City and Guilds Technical College in Finsbury and inspected in the basement the large copper coils which Professor Silvanus Thompson has had constructed with a view to furthering his investigations upon the physiological effects produced by an alternating magnetic field. As long ago as 1888 Lord Kelvin declared the senses to be more than five, and suggested a "magnetic sense." It was Kelvin's work that started Professor Thompson upon his investigations and led to his own recent communication to the Royal Society, followed up by later experiments on a more elaborate scale. Finding that with a large coil of copper wire connected with the electric mains certain visual effects were produced, he had two copper coils connected, each of which weighed a hundredweight and constructed of 10,000 magnetic lines per square centimetre. These were traversed by an alternating current, thus producing a magnetic field, and the head of the observer was placed between them, either longitudinally or with a coil at each temple, or vertically down the axis of the head. The effects, which may be presumed to be subjective, seem to vary with the observer. Professor Thompson himself states that he sees faint and pulsating or flickering whorls of a light bluish tint, not well defined nor equal over the whole range of vision, but somewhat brighter in the periphery than at the centre. The sensation exists in the daytime as well as in the dark, and the flicker superposes itself upon the surrounding objects.

[1] S. Hadda, *Berl. klin. Woch.*, No. 1. 1912.

Various members of the Roentgen Society who had had the opportunity of placing their heads between the coils were invited to describe their experiences. One medical man said that with his eyes closed he saw a "fluorescence" which affected him chiefly at one side; another had seen two flickering rings just above the level of the eyes, more clearly visible when the eyes were shut than when they were open; another's impression was of rapidly revolving circles having a golden rather than a bluish luminosity, and appearing to come, not from the retina, but from some distance away. Perhaps the concisest description of the appearance was given by Mr. A. A. Campbell Swinton, who said that what he saw was the visual equivalent of a buzz. Two observers, one being Professor F. W. Mott and the other an assistant of Professor Thompson, have declared themselves to be unable to see any effect whatever. Professor Thompson states that the appearances are much more evident if the sides of the head are placed next the coils than with the impulse going from front to back, and in both these directions they are clearer than with the head placed vertically between the coils. Can the magnet stimulate the nerves of hearing as well as sight? Unfortunately the noise in the generating room masks any such subjective effect, supposing it to exist. The only other phenomena are nausea or vertigo, which may come on after half an hour, and some people have noticed a slight taste in the mouth. The effects are undoubtedly due to electrical currents induced by magnetism, but Professor Thompson, who disclaims any pretension to be a physiologist, would not hazard a conjecture as to whether these electrical currents stimulate the actual nerve terminals in the retina or are more deeply seated. It appears that, to some extent, he has been anticipated by d'Arsonval of Paris, who in a verbal communication to the Société de Biologie, of which Professor Thompson was unaware when he began his own investigations, stated that a coil traversed by powerful alternating currents, but of the low frequency of 150 a second, would give rise to interesting phenomena, including "an appearance of light in the eye."

LITERARY NOTES.

MESSRS. JOHN WRIGHT AND SONS, Limited, Bristol, will shortly publish an *Index of Differential Diagnosis of Main Symptoms*, edited by Dr. Herbert French, Assistant Physician to Guy's Hospital. We have received an advance copy, and are informed that the work will be ready for delivery to subscribers in a week or ten days unless the coal strike continues. In the preface it is stated that the book "aims at being of practical utility to medical men whenever difficulty arises in deciding the precise cause of any particular symptom of which a patient may complain. It covers the whole ground of medicine, surgery, gynaecology, ophthalmology, dermatology, and neurology." It is a complementary volume to the *Index of Treatment* issued by the same publishers. Among the contributors are Dr. W. C. Bosanquet, Dr. A. E. Garrod, Dr. A. F. Hertz, Dr. Robert Hutchison, Sir Malcolm Morris, Dr. F. J. Smith, Dr. Frederick Taylor, and Dr. Hale White. The work is copiously illustrated by coloured plates and other drawings.

Georg Thieme, of Leipzig, announces the early publication of the collected writings of Robert Koch under the editorship of Professor G. Gaffky, Director of the Berlin Institute for Infectious Diseases; Professor E. Pfuhl, and Professor J. Schalbe, of Berlin. The work will be issued in three volumes, with 194 figures in the text and forty-five tables.

The *Arena* is the title of a new monthly periodical the aim of which is to appeal to the public school and university men as such, and to deal with all subjects likely to interest any one who is, or has been, associated in any capacity with these institutions. It is written by, and for, public school and university men.

Dr. Percy Rose writes with reference to the lines as to which Dr. Henry Barnes wrote in the JOURNAL of March 9th:

"It would be gratifying to ourselves if the lines quoted in last week's Literary Notes were a poetical appreciation of the personal services of the medical profession, but, unfortunately, they refer to mere books.

"They occur in the *Library* by George Crabbe and are as follows:

> There PHYSIC fills the space, and far around,
> Pile above pile her learned works abound:
> Glorious their aim—to ease the labouring heart;
> To war with death, and stop his flying dart;
> To trace the source whence the fierce contest grew,
> And life's short lease on easier terms renew;
> To calm the phrensy of the burning brain;
> To heal the tortures of imploring pain;
> Or, when more powerful ills all efforts brave,
> To ease the victim no device can save,
> And smooth the stormy passage to the grave.

Crabbe was no expert in the art of medicine, and books were his first love both for reading and for the joys of mere possession:

> . . . . first he paper'd all the row,
> And placed in order, to enjoy the show;
> Next letter'd all the backs with care and speed,
> Set them in ranks, and then began to read.

In his early trials, disappointments, and failures as a medical practitioner at Aldborough he turned to these consolers:

> Where all our griefs in others' strains rehearse,
> Speak with old Time, and with the dead converse;

In this frame of mind, coupled with a faculty of rhyme the *Library* was conceived. Forsaking medical practice, and bringing this with other poems to London, he was fortunate enough to secure the patronage of Edmund Burke, after waiting many weary months. Burke recognized genius in the lines, took the poet to his own home, where the work was completed in his library at Beaconsfield. From that day Crabbe's success was assured. He took orders, patronage and preferment made his path easy, and he died at Trowbridge some fifty years later, after nineteen years' service as rector of that parish. His memorial in the church there extols him as a minister and magistrate, but his connexion with the medical profession obtains no recognition. Crabbe's early experiences left him with very little to say in favour of his first profession. Though a voluminous writer, he devotes a bare twenty lines to The Worth and Excellence of the True Physician, and even then could not refrain from the Parthian shot contained in the last four words of the following couplet:

> Helpers of men they're called, and we confess
> Theirs the deep study, theirs the lucky guess;

But he gives some 200 lines to the advertising physician and the boastful Quack, while his fierce description of the parish doctor

> Who first insults the victim whom he kills;
> Whose murd'rous hand a drowsy Bench protect,
> And whose most tender mercy is neglect,

is still as grating as the angry waves on the shingle beach of Aldborough. We are, however, entitled to claim that only as a member of our profession was Crabbe enabled to obtain that early insight into the homes of the poor, which with his marvellous powers of observation and description resulted in his unrivalled poetic tales of the villagers of England. Aldborough in recent years honoured our profession and itself by electing Dr. Elizabeth Garrett Anderson to the position of Mayor, but evidence of its association with George Crabbe are not easy to find. Inquiries at the library there showed it did not possess a copy of his works. A few manuscripts lying loose in chests in the Moot Hall gave occasional references to his family, while a bust and tablet hidden in the parish church is the only testimony to its one-time poet, apothecary, and priest."

Mr. L. M. Griffiths has written an interesting account of the Bristol Medical Library. The library of the Bristol Medico-Chirurgical Society was formally opened on January 5th, 1891. By the aid of gifts of money and books (including a large donation from the British Medical Association) a start was made with over a thousand volumes and seventy-nine current journals. Later an arrangement for a joint library was made with University College, which did much to make the scheme a success and contributed greatly to the convenience of the members. Through the influence and energy of Greig Smith, the first Chairman of the Committee, nearly all the books belonging to the Infirmary and Hospital were added in 1894, and later the books from the Museum and Library were passed on by the city authorities to the reconstituted "Bristol Medical Library."

ROYAL COMMISSION ON VIVISECTION.

FINAL REPORT.

THE Final Report of the Royal Commission on Vivisection was issued on March 12th. It is a Blue Book of 139 pages, and only a general outline of its contents can be given now. It will be considered in detail in later issues. It consists of an introduction giving a general statement of the manner in which the subject is dealt with; an exposition of the existing law, summarizing the history of legislation on vivisection; the Act of 1876; colonial and foreign law; the administration of the Act in Great Britain; criticisms by witnesses (Mr. Stephen Coleridge, Miss Lind-af-Hageby, Lieutenant-Colonel Lawrie, I.M.S., and Mr. J. W. Graham), and the conclusions of the Commissioners thereon. The Commissioners next discuss the progress of science and the results of experiments on animals. They consider generally the progress of medical science in recent years and the question whether valuable results have been attained by the practice of experiments upon animals. They discuss the influence of experiment on the advance of physiology as a pure science; physiological discoveries which are stated to have been of immediate advantage in the practice of medicine and surgery.

Medicine.

It is pointed out that the practice of medicine depends on physiology, on pathology, and on pharmacology and therapeutics. Witnesses of eminence and experience, say the Commissioners, have testified to the necessity of experimentation on animals in building up these basic sciences. Reference is made to the evidence of Sir W. H. Power, Sir Lauder Brunton, Dr. Frederick Taylor, Sir Douglas Powell, and Sir William Osler, as to the utility of such experiments in the successful treatment of disease. In regard to drugs in particular, it is said that very full evidence had been laid before the Commission by Professor Cushny, Sir Lauder Brunton, Professor Fraser, and Professor Dixon. The report says:

"Of drugs introduced during the last forty years it was stated that one only, namely, pilocarpin, was introduced as a result of clinical observation; all the rest are stated to have been introduced as a result of animal experimentation. Among these new drugs may be mentioned:

"1. Soporifics, such as chloral, sulphonal, veronal.

"2. Local anaesthetics, such as cocain, eucain, stovain.

"3. Analgesics and antipyretics, such as antipyrin, antifebrin, phenacetin, exalgin.

"4. Physostigmin (or eserin) derived from the Calabar bean, which, by its action on the pupil, relieves the painful disease of the eye known as glaucoma.

"5. Amyl nitrite and other nitrites employed for their properties in dilating the blood vessels in the painful disease of angina pectoris.

"6. Diuretics such as caffein, theobromin, and diuretin, which increase the secretion of urine; and urotropin, employed to disinfect the urinary tract.

"It has also been stated that animal experimentation is necessary for the standardization of certain drugs, with a view to determining the precise strength and physiological effect of any dose of any particular drug."

Surgery.

Under the head of surgery, it is said that the great advances made during the last forty years are universally recognized. With regard to this special reference is made to the evidence of Sir Henry Morris, and Sir Victor Horsley is cited. The complete transformation of the results of surgical practice has, says the report, been attributed to the following causes: (*a*) The antiseptic or aseptic method; (*b*) the introduction of anaesthesia; (*c*) improved technique with regard to ligatures, sutures, etc., and greater knowledge in reference to the extent to which the various internal organs of the body can withstand surgical interference. Dealing with the first two factors as being of the greatest importance, and as affording the necessary conditions for the working out and the success of the improved technique, the Commissioners proceed to inquire how far this enormous improvement in man's power over diseased conditions is to be ascribed to experiments on animals. With regard to antiseptic and aseptic methods, the Commissioners quote the evidence given by Sir Henry Morris on behalf of the Royal College of Surgeons of England. He deemed experiments on living animals an essential mode of investigation, while fully admitting that other modes of research were employed, and that it was impossible to separate the advantages derived from each particular source. He referred to the evidence of Lord Lister before the Royal Commission of 1875, wherein he stated that he could not have made his way in the subject of antiseptics without the assistance he had derived from experiments on the lower animals. Lord Lister had been led to regard the infection of wounds as due to putrefaction of the discharges, and following Pasteur he traced putrefaction to the presence of bacteria, and sought for means to exclude them from wounds.

The Commissioners go on to say:

Lord Lister, in his earliest method, attempted to exclude all such organisms in the following ways. The skin of the patient and the hands of the operator were cleansed by strong antiseptic lotions. The instruments were sterilized by soaking in similar fluids, and the access of germs to the wound from the air during the operation was to be prevented by means of a fine spray of carbolic acid solution constantly playing on the wound. In order to exclude the air, the dressings of the wound, which were also soaked with antiseptics, were sealed by some impervious material. In consequence of further researches and experience, some modification of the technique first introduced by Lord Lister occurred, and the evolution of the aseptic method resulted. It was recognized that the number of pathogenic micro-organisms contained in ordinary air was insignificant in comparison with the numbers on the skin of the patient or on the hands of the operator, so that it became possible to omit the carbolic spray since its use was founded on a theory which was physically impossible. The irritating effects of the various antiseptics on the tissues were found to interfere with the processes of healing, and in some cases to give rise to symptoms of poisoning in consequence of their absorption into the system. Their use was, therefore, confined to the cleansing of the patient's skin and of the surgeon's hands. It was found that exposure to boiling water was an infallible means of sterilization, and this method was, therefore, introduced for the same purpose in the case of instruments and dressings instead of the soaking in antiseptic solutions which had been previously employed. At the same time scrupulous means were now taken for the avoidance of any accidental contamination of the wound. The operation was carried on with as scrupulous care and with the same technique as the bacteriologist employed when he was isolating one organism from another, and the operation being finished the wound was closed, covered with aseptic dressings, and the processes of repair were observed to proceed without check, so that on removing the dressings at the end of ten days, complete recovery was often found to have taken place.

Certain witnesses have emphasized the distinction between the antiseptic and the aseptic methods, and have pointed out that the late Mr. Lawson Tait and others successfully used what is now known as the aseptic method at a time when most surgeons were using the antiseptic method, but both methods are clearly traceable to the recognition of the need of cleanliness in surgery, and neither can be dissociated from the work of Lord Lister, as founded on Pasteur's researches on the origin of putrefaction and septic disease. The spray which formerly was regarded as necessary is now an abolished thing. Aseptic surgery has superseded antiseptic surgery. Subsequent experiments by Koch led to the distinction between pathogenic and non-pathogenic bacteria and the recognition of the part played by chemical products of bacteria in the causation of disease. It is also true that Semmelweis before 1850 had attributed the blood poisoning then so common after childbirth to putrid infection, and had urged cleanliness in the lying-in room as the means of preventing it. The importance of his doctrine, though not generally admitted during his lifetime, alike in surgical wards and in maternity departments, had not escaped the attention of his contemporary Haller, of Vienna.

The pain of the operation itself under former conditions was only part, and often the smaller part, of the total pain suffered by the patient. So long as suppuration regularly attended the healing of wounds, even a simple case like the removal of a breast for cancer, or the amputation of a limb, might require painful dressings for several weeks. At the present time only one or two dressings are usually requisite pending the healing of the wound in the course of a fortnight. The pain of an aseptic wound, which does not usually last longer than about forty hours, is, in the words of Sir Victor Horsley, "a perfectly tolerable pain." After that, in the healing, there is little or no pain. Aseptic surgery has, in this way, saved an amount of pain which is incalculable.

Dealing with anaesthesia it is said: "The introduction of anaesthesia not only rendered it possible for the surgeon to undertake more extensive operations, but also allows him to proceed leisurely about the task and devote his whole attention to the observation of all the minute details which make for success. For the production of anaesthesia during an operation the anaesthetics usually employed are chloroform or ether. The discovery of anaesthetics owes

nothing to experiments on animals. Thousands of experiments have, however, been made on animals with a view to elucidate the mode of action and the methods of preventing danger from the use of anaesthetics. No general anaesthetic appears to be entirely free from risk. A number of deaths still occur in each year as a result of the administration of anaesthetics, deaths which it is hoped may be prevented by a more exact knowledge of the action of these substances. Dr. Dudley Buxton stated that although the actual discovery of anaesthesia was not due to experiments on animals, our knowledge of the precise action of anaesthesia is entirely due to such experiments, and evidence was presented by Sir V. Horsley and by Dr. Waller intended to show that, as a result of such experiments, certain methods had been introduced for the administration of chloroform free from the risks attendant on administration in the way which has been usually employed. These witnesses anticipated that, by the use of improved methods, there would be a considerable reduction in the number of cases of death from the anaesthetic itself. The risks and certain other disadvantages attendant on the use of respirable anaesthetics have led to a search being made by animal experimentation for safer methods of abolishing the pain attendant on such operations. The introduction of such methods of local anaesthesia as the subcutaneous injection of cocain or eucain, and the injection of stovain into the spinal canal, are claimed as the result of such researches, also the employment of subcutaneous injections of morphia mixed with hyoscin for the production of a state of general anaesthesia."

Improvements in Technique.

In regard to improvement in technique, it is said that "the power of controlling the conditions of the operation placed within the hands of the surgeon by the introduction of anaesthesia and of the aseptic method has rendered it possible for him to interfere frequently with organs and to employ operative procedures which, in the absence of these methods, would have been impossible. In the elaboration of such new operations and operative procedures resort has often been had to experiments on animals."

Infectious Diseases.

Proceeding to dicuss infectious diseases the Commissioners say: "During the last forty years great progress has been made in regard to the knowledge and control of infectious diseases. The Royal Commission of 1875 in their report drew attention to the commencement of researches having for their object the production of communicable disease in the lower animals, with a view to studying their nature and cause, and thus, if possible, arriving at means for preventing their occurrence or spread in man. That report dealt with experiments under three categories, the first relating to physiological operations, the second to the administration of drugs and poisons, and the last to the subject now under consideration. Sir John Simon was the first to advise the Government Health Department, then the Privy Council, and later the Local Government Board, to make systematic use of experiments on animals for the elucidation of disease which threatened the public health. This was in 1865, and from 1870 to the present time there had been a special annual grant from the Treasury for the purpose."

In the case of each infectious disorder, attempts were made to determine:

1. The nature and the life history of the micro-organism which caused the disease.
2. The conditions under which such organism can live and be destroyed.
3. The circumstances which determine its virulence.

The Commissioners, after referring to researches on these subjects, and on the production of immunity, pass in review the work that has been done in tuberculosis, plague, malaria, yellow fever, hydrophobia, sleeping sickness, diphtheria, tetanus, dysentery, Malta fever, and snake poison. They next deal with the work of public health authorities and the diseases of animals. Their remarks on these subjects will be summarized in a later issue. At present, want of space prevents our giving more than their conclusions. These are as follows:

Conclusions.

"It will be apparent from the foregoing analysis of the evidence brought before us that we have made full inquiry into the practice of subjecting live animals to experiments by vivisection and otherwise, as regards:

(*a*) The recent progress of medical science; and
(*b*) The practical results that have been obtained.

We have received evidence from persons eminent in physiological, pathological, and sanitary science who have testified to their belief that knowledge has been acquired in regard to the vital functions, the causes of disease, and also in regard to means for their prevention and cure, which, in their opinion, but for such experiments, could not have been acquired. We have, on the other hand, heard many witnesses, some of them having medical qualifications, who have disputed that valuable knowledge has been obtained by such experiments, maintaining that this knowledge has been erroneously attributed to such experiments, or who contended that success has not attended the application of the knowledge to the preventive or curative treatment of disease.

"Having regard to the witnesses who have appeared before us and to the evidence which we have received, there can be no doubt that the great preponderance of medical and scientific authority is against the opponents of vivisection. This is more markedly so now than was the case before the Royal Commission of 1875.

"On these questions, and apart altogether from the moral and ethical questions involved in the employment of experiments on living animals for scientific purposes, we are, after full consideration, led to think:

"1. That certain results, claimed from time to time to have been proved by experiments upon living animals and alleged to have been beneficial in preventing or curing disease, have, on further investigation and experience, been found to be fallacious or useless.

"2. That, notwithstanding such failures, valuable knowledge has been acquired in regard to physiological processes and the causation of disease, and that useful methods for the prevention, cure and treatment of certain diseases have resulted from experimental investigations upon living animals.

"3. That, as far as we can judge, it is highly improbable that, without experiments made on animals, mankind would at the present time have been in possession of such knowledge.

"4. That, in so far as disease has been successfully prevented or its mortality reduced, suffering has been diminished in man and in lower animals.

"5. That there is ground for believing that similar methods of investigation if pursued in the future will be attended with similar results."

PAIN.

The question of pain in experiments on animals is considered under the heads of anaesthetics, inoculations, and miscellaneous questions, in which are included pithing, experiments on fish, and experiments for demonstration. The following are the conclusions of the Commissioners:

"After full consideration we are led to the conclusion that experiments upon animals adequately safeguarded by law, faithfully administered, are morally justifiable, and should not be prohibited by legislation.

"As regards the different classes of animals used for experiments and the possibility of making discrimination between them for such purpose, we are again confronted with a delicate question of relative ethics. Here, again, there can be little doubt that the general moral sense of civilized mankind would be prepared to make such differentiation and would regard with quite a different degree of reprobation the like treatment for such purpose of one of the domesticated animals on the one hand with that of cold-blooded or indeed verminous or destructive animals on the other hand. The *differentia* in such case would probably be found to consist in the degree of association with, or of affinity or utility to, man.

"We feel that recognition should be accorded to the reality and worthiness of such underlying sentiment which would secure a special reservation for animals coming within the aforesaid limits. Thus we think that the higher apes (anthropoid) and the dog and cat present claims for special consideration; and with these claims we deal subsequently in our report."

RECOMMENDATIONS.

The following is a summary of the recommendations of the Commissioners regarding the various points submitted to their consideration:

First, in regard to the Act and its administration, they say that they have come to the conclusion that the present system, although open to adverse criticism which has been indicated, has nevertheless been so worked as to secure a large degree of protection to animals subject to experiment and at the same time so as not to hamper or impede research. Such a system, to which all the parties affected have by long experience become habituated, should not, in our opinion, notwithstanding its imperfections, be lightly thrown away. They thought it capable of improvement, and have made several recommendations calculated, in their opinion, more effectually to secure the objects aimed at by the Act. It will be for the Secretary of State and his legal advisers to decide whether these recommendations can be carried out by departmental requirements, which it is in his power to add under the existing law. Should he be advised that he has not adequate powers for the purpose, they should, in our opinion, be provided by fresh legislation.

The following are their recommendations:

Inspection.—They are of opinion that in order to secure adequate inspection the existing number of inspectors should be increased. They further think that with a view to concentrate the work and facilitate inspection it is desirable that, as far as possible, the issue of licences should be limited to those places which are in connexion with universities or other public authorities or institutions. The inspectors should be sufficiently numerous, and should have at their command ample time to afford to the public reasonable assurance that the law is faithfully administered. This might be effected by appointing a sufficient number, either of whole-time or part-time officers. They are inclined to think, having regard to the present number of licensed premises and experiments, that there would be an adequate increase of inspection if, in place of the existing arrangements, the Chief Inspector were a whole-time officer, and if in addition to him there were three whole-time inspectors for Great Britain.

Assuming that it is not thought practicable or desirable to appoint whole-time officers, but that the services of inspectors in the active practice of their professions should be retained, they think that arrangements should be made to secure a sufficient number of such inspectors who could give such time to their duties as would be equivalent to the services of the four whole-time men. It is essential that the inspectors should be qualified medical men of such position as to secure the confidence both of their own profession and of the public. As to Ireland, they think that, having regard to the comparatively small number of licensed places and of experiments carried out under the Act in that country, sufficient inspection can be obtained by the services of one or more part-time inspectors.

Use of Curare.—In regard to curare, they say that some of them are of opinion its use should be altogether prohibited, but they are all agreed that if its use is to be permitted at all, an inspector or some person nominated by the Secretary of State should be present from the commencement of the experiment, who would satisfy himself that the animal is throughout the whole experiment and until its death in a state of complete anaesthesia.

Experiments for Demonstration.—With regard to experiments performed by way of demonstration in medical schools, hospitals, or colleges, we think that the provisions of the present Act are sufficient, subject to the suggestions made in Paragraph 118 of the report. (See below, under the heading "Experiments on Dogs and Certain other Animals.")

Manual Dexterity.—It is pointed out that the evidence as to the necessity or desirability of experiments on living animals for the purpose of attaining manual skill which might hereafter be useful in operations on human creatures was conflicting. The Commissioners are therefore not prepared to recommend any alteration of the existing law in this respect.

Serums and Vaccines.—The Commissioners have considered the question as to whether the production of serums and vaccines for commercial purposes ought to be brought within the provisions of the Act of 1876, and they have come to the conclusion that it ought not. In the interests of the public there may well be grounds for holding that the production of serums ought to be under regulation and inspection, but they do not think that it should be dealt with in an Act which deals with experimental research. Operations for gain, such as the production of serums and the castration or spaying of animals to improve their market value, stand on a different footing from operations for the advancement of knowledge, and require to be dealt with under wholly different conditions. They note that Section 1 (*c*) of the Protection of Animals Act, 1911 (1 and 2 Geo. V, c. 27), makes it an offence, punishable with six months imprisonment, "to subject or cause to procure, or being the owner permit to be subjected any animal to any operation which is performed without due care and humanity."

Experiments on Dogs and Certain other Animals.—As to the use of dogs and other specified animals, they say they have already adduced reasons which lead them to justify a differentiation in the use of certain animals from that of others for the purposes of scientific experiments. Such discrimination, though admittedly difficult, they attributed on ethical grounds to the degree of association with or affinity or utility to man, and in this connexion they referred especially to the case of dogs and the higher apes.

They realize that the exclusion by law of any particular class of animals may be objected to as logically untenable, and in view of the continuity of the animal series that it is by no means easy to draw a sharp line of demarcation between an exempted and an unexempted class. They proceed:

> But precedents are not wanting, even in law, for making some such attempts. Thus, the general law precludes the employment of dogs for purposes of traction in this country, whereas in several Continental countries they are habitually employed for such purposes. Even in the Act of 1876 an attempt is made in Section 5, entitled "Special restrictions on painful experiments on dogs and cats, etc.," to effect some such discrimination. This clause (which led to the granting of Certificates E and F) deals with cats somewhat differently from the way in which it deals with horses, asses or mules, which are the other animals selected in the Act for special treatment. Thus, dogs and cats may, if anaesthetized, be the subjects of experiments under licence only, but may not be used for experiments without anaesthesia unless a certificate is given by one or other of the scientific authorities named in the Act, stating for reasons specified that the experiment will be necessarily frustrated unless performed on a dog or cat. On the other hand, no experiment, even with anaesthetics, may be made on a horse, ass, or mule, unless a licensee is armed with a certificate in similar terms from one or other of the authorities named.
>
> Thus at the present time the law makes a distinction between some animals and others for the purposes of the Act, and discriminates between dogs and cats on the one hand, and horses, asses and mules on the other. No specific mention is made of any other animal (except that invertebrata are excluded from the purview of the Act), and no animal is altogether exempted from scientific experiment. For purposes of demonstration any animal (including cats and dogs) may, under Section 3 (Certificate C), be employed under anaesthetics, but in the case of the horse, ass or mule a further Certificate F would presumably be necessary for the employment of such animal for demonstration purposes. The representations made to us for the complete exemption of any class of animal from all experiments under the Act have been strongest in the case of dogs. On the other hand, many of the scientific witnesses have represented strongly the case for the employment of dogs for certain experiments and demonstrations.
>
> * * * * * *
>
> In view of the variety of practice and the divergence of opinion as to the necessity of employing dogs for experimentation and demonstration, we find some difficulty in deciding upon this important question. Some of us regard the provisions of the existing law as sufficient, some of us would prefer that in the case both of experimentation and demonstration the further special protection given to horses, asses, and mules should be extended to dogs, while some of us would exclude the use of dogs altogether. But if any alteration is made in the existing procedure, the majority of us would agree that the special enactments now applicable to horses, asses, and mules might be extended to dogs, and also to cats and anthropoid apes.

Pithing.—The Commissioners are of opinion that no lesser operation than a complete destruction of the brain or decapitation should be accepted as equivalent to the production of complete anaesthesia. They also think it desirable that the operation of pithing a warm-blooded animal with a view to an experiment should be conducted only by a licensed person, and that the operation should be performed under an adequate anaesthetic.

Cold-blooded Animals.—They carefully considered the suggestion that all cold-blooded animals should be exempted from the operation of the Act, but having regard to the limited knowledge which at present obtains as to the capacity of suffering in such animals, they do not make such recommendations.

Licences and Certificates.—In regard to this point the Commissioners say:

With regard to licences and certificates we have given very careful consideration to the various suggestions made as to alteration in their form or in the method of granting them, and have come to the conclusion that inasmuch as the present system, according to the judgement of the majority of those witnesses who possessed the knowledge and the opportunity for forming a trustworthy opinion on such a point, has on the whole worked efficiently, no change is necessary or desirable, but we desire to add that in our view it is of the highest importance that the responsibility of the Secretary of State should be in all respects maintained, and we are therefore strongly of opinion that no certificate should be available until the applicant has received notice that it has not been disallowed by the Secretary of State. We understand that this is the practice at the present time, and we recommend that a condition to this effect should be annexed to every licence as well as endorsed on every certificate.

As to granting licences and certificates to foreigners temporarily resident in England, we are informed that the present practice of the Secretary of State has been to direct that such licences and certificates shall only be granted to such persons on condition that they should perform experiments only under the supervision of the head of some particular laboratory, who is responsible for the due observance of the provisions of the Act. In our opinion this restriction is wise, and we recommend that the above condition should be attached to all licences and certificates granted to foreigners.

We have noted that it is the practice of the Home Office to supplement the provisions of the Act by attaching various conditions to licences or certificates. Where the animal is allowed to recover from the anaesthetic and there is a wound to which it is practicable to apply antiseptics, the following condition is inserted in the licence:

That the animals experimented on under Certificates . . , be treated with strict antiseptic precautions, and if these fail and pain results, that the animals be immediately killed under anaesthetics.

Where the use of an anaesthetic is dispensed with unless it is obvious that pain could not ensue from the procedure contemplated, and in some cases where the animal is allowed to recover from the anaesthetic but the antiseptic condition is inapplicable, the following condition is inserted:

That if an animal, after and by reason of any of the said experiments under the said Certificates . . . is found to be in pain, which is either considerable in amount or is likely to endure, and if the main result of the experiment has been attained, the animal shall be immediately killed under anaesthetics.

We think it is well that the fact that such conditions are attached should be generally known, but we are of opinion that additional safeguards against pain might be provided without interfering with legitimate research, and we therefore recommend:

(1) That an Inspector should have power to order the painless destruction of any animal which, having been the subject of any experiment, shows signs of obvious suffering or considerable pain, even though the object of the experiment may not have been attained; and

(2) That in all cases in which in the opinion of the experimenter the animal is suffering severe pain which is likely to endure it shall be his duty to cause its painless death, even though the object of the experiment has not been attained.

The above conditions should be attached to certificates.

Summing up this subject they say:

"We regret that we cannot recommend any further extension of the 'pain condition.' We are anxious, as far as possible, to prevent or to limit animal suffering in every case. We have recommended that there should be increased inspection, that wide powers should be given to inspectors to order the painless destruction of any animal under experiment, and that in future, although the object of the experiment has not been attained, no animal should be allowed to live in severe pain which is likely to endure. But we do not feel justified in recommending that, when the object of the experiment has not been attained, an experimenter should in all cases be required to destroy the animal immediately it exhibits signs even of severe pain, which might in some cases be only momentary.

"We are satisfied by the evidence that in the great majority of the experiments under the Act the animals do not exhibit any symptoms suggestive of severe pain, and to require the immediate destruction of an animal as soon as it exhibits such symptoms might, in our opinion, put an insuperable obstacle in the way of investigating many widespread diseases (afflicting both men and domesticated animals) with respect to which further knowledge as to their nature and treatment is in the interest of humanity urgently required.

"It must not be forgotten that it is in the case of diseases which are naturally painful when they attack men or animals that experiments are most likely to involve pain to animals which are experimentally infected; as examples we may instance cancer, cholera, plague, tetanus, rabies, and snake bite.

"We are compelled to accept the weighty evidence given before us to the effect that the study of animals experimentally infected with some of these diseases has given us knowledge which has been instrumental in saving much mortality and suffering both in man and animals, and we believe that discoveries already made in this way justify the hope that by the same methods knowledge may yet be extended regarding the means of preventing or curing other most painful diseases which are at present scarcely or not at all amenable to treatment. And, finally, we feel that as long as public opinion sanctions the infliction on animals of pain—which is not only severe but of long duration—in the pursuit of sport, and in carrying out such operations as castration and spaying, or in the destruction of rabbits and of rats and other vermin by traps and painful poisons, it would be inconsistent and unreasonable to go further than we have already gone in limiting experiments which are designed to result and, according to experience, will probably result in preventing or alleviating great human or animal suffering."

An Advisory Body.—As to an advisory body, the Commissioners endorse the views of the Commission presided over by Lord Cardwell in 1875, that:

In the administration of the system generally, the responsible Minister would, of course, be guided by the opinion of advisers of competent knowledge and experience, but we think it is inexpedient to divide the responsibility of the Secretary of State with that of any other persons by statutory enactment, and we recommend that his advisers should be from time to time selected and nominated by himself. Their names should be made known to the profession and to the public.

They think that the practice followed by various Home Secretaries for nearly thirty years of obtaining professional advice as a guide in the exercise of their powers and discharge of their responsibility is a reasonable and proper practice, but in their opinion the recommendations of the Commission of 1875 should be strictly followed.

These advisers should, as regards Great Britain, be selected by the Secretary of State from a list of names submitted to him by the Royal Society and by the Royal Colleges of Physicians and Surgeons in London. No person so selected should be the holder of a licence, and the names of all persons so selected, as well as the names of the scientific authorities under the Act, should be published. The adoption of this suggestion would involve a discontinuance of the present practice of reference to the Association for the Advancement of Medicine by Research.

With regard to Ireland, where heretofore there has been no Advisory Body, the Commissioners think that the Chief Secretary should be advised by a body chosen upon analogous lines.

Records of Experiments.—In regard to this point, the Commissioners are of opinion that in certain cases immediate or special records or reports of results should be furnished to the Home Office by licensees.

Summary of Recommendations.

The various recommendations are recapitulated as follows:

1. An increase in the inspectorate.
2. Further limitations as regards the use of curare.
3. Stricter provisions as to the definition and practice of pithing.
4. Additional restrictions regulating the painless destruction of animals which show signs of suffering after experiment.
5. A change in the method of selecting and in the constitution of the Advisory Body to the Secretary of State.
6. Special records by experimenters in certain cases.

The report is signed by Mr. A. J. Ram (Chairman), Sir William Church, Sir John McFadyean, Sir Mackenzie Chalmers, Dr. W. H. Gaskell; and also by Colonel Lockwood, Sir William J. Collins, and Dr. George Wilson, subject to reservations contained in memoranda, an abstract of which will be given later.

The two main points upon which they dissent from the report are, first, as to securing by Statute that undivided responsibility of the Secretary of State which was recommended by the previous Royal Commission, but which the Act of 1876 failed to establish, and secondly, as to placing a statutory requirement upon an experimenter painlessly to destroy an animal which has been experimented upon when obvious suffering has supervened. Both points lead up to and in their opinion necessitate amendments of the law.

British Medical Journal.

SATURDAY, MARCH 16th, 1912.

VIVISECTION VINDICATED.

Elsewhere will be found a preliminary summary of the Report of the Royal Commission on Vivisection which was issued on March 12th. It is necessarily confined to the most salient points; there are several others which require close attention and with which we propose to deal in detail later. The document is one of the highest importance to the medical profession and to all interested in the progress of science. The conclusions set forth therein have not been arrived at hastily, for the Commission was appointed on September 17th, 1906. The Commission was charged "to inquire into and report upon the practice of subjecting live animals to experiments, whether by vivisection or otherwise, and also to inquire into the law relating to that practice and its administration; and to report whether any, and if so what, changes are desirable." In discharge of this duty the Commission has held more than seventy meetings and examined many witnesses, and has received a large amount of documentary evidence. In this way the Commission has had the opportunity of considering every aspect of the questions covered by the terms of reference and every shade of opinion held as to experiments on living animals. The evidence before it—which is contained in four previous reports, full abstracts of which were published in the Journal as they appeared—includes, in the words of the Commissioners, "that of representatives of the Government Departments which either administer the existing law or carry on researches under its provisions; of the principal scientific, physiological, and medical bodies; and of the leading universities in the United Kingdom, as well as of numerous private practitioners, medical and veterinary, and representatives of the various vivisection and humanitarian societies which have in recent years occupied themselves with the protection of the interests of domestic and other animals."

The Commissioners in their report, dealing with the administration of the Act of 1876, state that no legal proceedings have been instituted under the Act either by the Home Office or by any individual. Since 1876 licences have been withdrawn in only four cases. During the same period of thirty years some sixty cases of minor importance—described by Sir William Byrne as being trivial and technical in their nature—have come under the notice of the Home Secretary. In view of these facts it is not surprising that the charges against the administration of the Home Office after careful examination are generally dismissed as unjustified. To quote the words of the report, "these twelve charges of Mr. Coleridge's are the outcome of a ten years' investigation of the administration of the Act by the Department conducted by an acute and indefatigable critic, supported, as he told us, with ample funds." They have indicated certain points in which they think that the administration of the Home Office may be open to criticism, but they are of opinion that on the whole the working of the Act has been performed with a desire faithfully to carry out the objects which its framers had in view.

Dealing generally with the antivivisectionist witnesses—among whom, besides Mr. Coleridge, they name Miss Lind-af-Hageby, Mrs. Cook, Lieutenant-Colonel Lawrie, and Mr. J. W. Graham who gave evidence on behalf of the Parliamentary Association for the Abolition of Vivisection—the Commissioners state that, after careful consideration of the cases cited by them, they have come to the conclusion that these witnesses have either misapprehended or inaccurately described the facts of the experiments. They also state that, as far as they can judge, they believe that holders of licences and certificates, with rare exceptions, have endeavoured with loyalty and good faith to conform to the provisions of the law. They add—and we hope the utterance will be taken to heart by the fanatics who propagate falsehoods as to vivisection—that "the harrowing descriptions and illustrations of operations inflicted on animals, which are freely circulated by post, advertisement, or otherwise, are in many cases calculated to mislead the public, so far as they suggest that the animals in question were not under an anaesthetic. To represent that animals subjected to experiments in this country are wantonly tortured would, in our opinion, be absolutely false." We hope Mr. Stephen Coleridge in particular, whose chief controversial stock-in-trade is this misleading use of the word "torture," will lay this carefully weighed statement to heart. Those who keep "shops" of which it may be said the windows are dressed with lies, all the more vile since they pander to hysterical sensationalism and appeal to the most ignorant of the people, come within the scope of the same condemnation

There are several points which we must leave for closer analysis and comment in further articles. We need only say here that it may on the whole be anticipated that the recommendations will be accepted by the general body of the profession. Provided the inspectors chosen are men conversant with the aims and methods of scientific research, an increase in their number can only be beneficial as safeguarding investigators from calumny.

As regards curare—the "hellish woorali" of Tennyson who, we believe, lived to regret having written the verses in which the words occur—it is so little in use that it seems hardly worth while limiting it further. We agree with Sir Victor Horsley, who sees no objection to an inspector being present in all cases in which it is administered, provided that the convenience of the investigator is safeguarded.

As regards the exemption of dogs from experiment—a matter which has within the last few days been brought before the House of Commons by Sir Frederick Banbury and Mr. Lockwood—the Commissioners were unable to come to a unanimous conclusion. The proposal is, as they admit, "logically untenable," and we hold strongly that sufficient evidence was advanced in favour of allowing the law to remain as it stands. This and the other recommendations will be more fully discussed later.

We cannot leave the subject without referring to the fact that Lord Cromer has felt compelled by advancing years and failing health to retire from the position of President of the Research Society. His name has been as a tower of strength in the protection of scientific investigators from the slander and obloquy of the opponents of animal experimentation. He has been made the target for much unscrupulous and virulent abuse, which he has borne with the quiet fortitude of a man whom long experience as an administrator has made invulnerable to such assaults.

The medical profession owes him a deep debt of gratitude for the service he has rendered to t' e cause of truth. He is emphatically a strong m n and his place as President of the Society will be very difficult to fill. His last act is entirely worthy of him. His assurance that the report of the Commission is an eminently judicial document cannot fail to carry great weight with the public, especially, to use his own words, with that very large section of the community which has not taken any part in the controversy which has raged over this subject, but which wishes to be informed of the true facts of the case. We doubt, however, whether the report will be welcomed, as Lord Cromer says it ought to be, by the opponents of vivisection, for, in Gladstone's famous phrase, it "smashes, shatters, and pulverizes" their case.

In other respects it leaves things very much as they are, and if the recommendations are embodied in a new Act will not seriously hamper research if they are carried out in a reasonable spirit. The report is, on the whole, a complete vindication of vivisection.

THE TREATMENT OF FRACTURES.

THE subject of the management of fractures of bones has waited long for adequate consideration by surgeons. Here and there some of those who from the nature of their work have paid more than the average attention to it have called for modifications of the routine treatment; but their doctrines have to a great extent fallen on dry ground, and methods are still widely in vogue which would be admitted by those who practise them to be associated with long disability in many cases and permanent crippling in not a few.

Up to within quite recent times the routine hospital method consisted in the application of splints, and their retention in place to the end of a period believed to be that required for firm union. An exact reduction of the displacement was practically never obtained, and in most instances not expected. When splints were removed there remained more or less extensive adhesions and infiltration of the soft parts, together with wasting of the muscles from disuse, which extended the period of disability many weeks, and often not weeks but months. With what may be called the renascence of surgery questions began to be raised here and there as to the adequacy of this routine treatment, but the attention of surgeons in general was more directed to the many new fields opened up by the genius of Lister, and it is only within comparatively recent times that the subject of fracture treatment has been adequately discussed.

The new methods of treatment that have been introduced have been designed to obviate the one or the other of two defects chargeable against the existing routine—the one, imperfect reduction of bone displacement; the other, the associated lesions of the soft parts. Lister himself was largely instrumental in introducing the method of bone suture with the object of obtaining an exact reposition impossible or difficult in certain fractures. The method was introduced to remedy failure of bone union known to be a comparatively frequent event in a certain small class of fractures. The indications for this and other operative procedures have been greatly extended by those who look upon exact restitution of outline as a matter of capital importance; to the extent of advocating open operation in a majority of cases, at any rate in a majority of the fractures of the lower limb. The names of Lane in this country and Lambotte on the Continent are those principally associated with the development of these methods.

The first attempts to deal with disability arising from lesions of the soft parts took the form of massage and forcible breaking down of adhesions following the period of splint retention. In the form in which these methods were first employed the results were disappointing and the treatment was painful and distressing to the patient and wearisome to the surgeon. The systematic application of vigorous massage and forcible movement hastened recovery in many a case, yet its imperfections raised the question whether the disability which it was designed to remove was really an inevitable consequence of a broken limb. A negative answer to this question was soon forthcoming. Lucas-Championnière and others maintained that if attention was devoted to the structures responsible for the function of the limb *from the beginning* the long convalescence after union could be greatly shortened or avoided altogether.

In the face of the advocacy of these new methods by these two schools and the publication of results, one thing at least has become quite clear—that a radical change in the older methods of treatment is overdue, and that the practice and teaching on the subject require thorough reformation. We are led to make these observations at this moment in anticipation of the report of the Special Fractures Committee of the British Medical Association by the recent publication of a book by Mr. James B. Mennell, entitled *The Treatment of Fractures by Mobilisation and Massage*.[1] Its perusal may lead other surgeons to make further contributions to the mass of materials and opinions the Committee has, we understand, already collected.

Mr. Mennell advances high claims for the methods with which the name of Lucas-Championnière is particularly associated, and is evidently able to speak from a large personal experience of their application. He attacks the old methods of immobilization, and summarizes certain evidence which goes to show that some movement is essential to the formation of satisfactory callus, and that this callus ossifies more quickly when massage and mobilization are employed. He holds that under the old methods of treatment the functional condition of the limb was greatly sacrificed with a view to obtaining an ideal restitution of outline which was usually unattainable by these means. It is claimed that massage and mobilization are of value in every stage of fracture treatment. In the first stage the effect of massage is to relieve pain and to relieve spasm, and it paves the way to a reduction of deformity with more perfect apposition than can be obtained by any method short of open operation.

Mr. Mennell inveighs against forcible massage; the massage from which he claims to get his results is little more than a light stroking of the limb applied in definite directions without causing pain. He applies to this form of massage the term "glucokinesis." The hope may, by the way, be expressed that his methods are more correct than his etymology. In his view the trained masseuse of the present day is much too forceful a person, who often inflicts torture without producing commensurate benefit. The passive movements which Mr. Mennell employs and advocates are also of an exceedingly gentle character, stopping short of the infliction of pain, and avoiding any movement which may tend to reproduce deformity. The fixation apparatus recommended for use with these methods is of the simplest character, and is kept in position for short periods

[1] *The Treatment of Fractures by Mobilisation and Massage.* By James B. Mennell, M.D., B.C.; with an introduction by Dr. J. Lucas-Championnière. London: Macmillan and Co., Ltd. 1911. (Med. 8vo, pp. 472; figs. 67. Price 12s. net.)

only. "The correct use of splints," he says, "is to leave them in position until union is sufficiently firm to allow of the most gentle movement without displacement. The use of splints for four days will prove sufficient for the majority of fractures, a week for the remainder, except possibly for fractures of the femur where there has been great displacement, and consequently tearing of the periosteum." While insisting on the efficiency of the methods he advocates for the ordinary run of cases, Mr. Mennell, and, indeed, M. Lucas-Championnière himself, disclaim any prejudice against operation; on the contrary, operation is advised when gross deformity persists, when a deformity interferes with the function of a limb, if there is persistent deviation of axis, and if shortening in spite of perfect use is disadvantageous to the patient.

Mr. Mennell writes with conviction and enthusiasm on his subject, and the appearance of his work will compel the attention of English surgeons to the methods of Lucas-Championnière—an attention which has not hitherto been adequate. The essential and attractive feature of these methods is that they aim at the prophylaxis of all those various functional disorders hitherto commonly associated with fracture, which make its treatment so lengthy and tiresome. At its highest the claim is that the limb is functionally perfect at the time when union is sound and that restitution and union are both facilitated.

There is no essential antagonism between these methods and the other newer method of treatment—the operative. Some enthusiastic advocates of open operation would have surgeons operate on most of their fracture cases. Before this doctrine is accepted there will have to be further proof that minor degrees of incorrect alignment prejudice the functional result. It has been proved to demonstration that the functional result is highly prejudiced by certain complications in the soft parts, which are very commonly associated with fracture of the bones. Those surgeons, therefore, who are attacking these complications are attacking an admitted evil. Those who operate to reduce slight deformities have yet to show good reason for their practice. All surgeons now believe that operation may be called for under certain conditions in simple fractures, and that it has a permanent place in their treatment, but to advocate it as a routine is to greatly overstate its indications.

Mr. Mennell's book teaches the necessity for a thorough investigation into methods of fracture treatment. It is a subject of great public importance, especially to the industrial classes, and we look with confidence to the committee appointed by the British Medical Association to give to the profession a much-needed lead in the matter.

THE TROPICAL DISEASES RESEARCH FUND.

In spite of all that may justly be said as to the supineness of the British Government and British officials in the matter of scientific research, there are good grounds for national pride in the way in which the British Empire took the lead, and is continuing to hold a leading place, in the study of tropical medicine and hygiene. It is very obvious that there was an obligation on us to take this position, for no other State has dominions so extensive within the tropics and the subtropics. The impetus given during Mr. Joseph Chamberlain's tenure of office as Secretary of State for the Colonies to the study of the administrative problems involved has not died away. It was consolidated by the establishment of the Schools of Tropical Medicine in London and Liverpool, and the Colonial and Indian administrations are now more or less thoroughly imbued with the idea that the prevention of the appalling rates of sickness, death, and invaliding which used to prevail is a matter of skilful and painstaking administrative work resting on the safe basis of sound scientific observations and experiment. By nobody has the truth of this been recognized more fully than by the present Secretary of State for the Colonies, Mr. Lewis Harcourt, who by his decisions and by several recent speeches, in which a light touch has not concealed a serious purpose, has shown that he fully recognizes the far-reaching importance of this part of the interests committed to his official care.

Some of the work which is being done directly under official auspices is described in the report for 1911 of the Advisory Committee for the Tropical Diseases Research Fund, which was issued last week. This Committee was appointed by the Secretary of State for the Colonies in 1904. Its Chairman is the Right Hon. Sir J. West Ridgeway, who has had administrative experience in India, Ceylon, and South Africa; and among the ten other members of the Committee the medical profession is represented by Sir Thomas Barlow, Sir J. Rose Bradford, Colonel Sir David Bruce, Sir Patrick Manson, Sir A. M. Branfoot, and Sir Ronald Ross. The Committee had in 1911 an income of £3,345, derived partly from grants voted by the Imperial Government (£1,000) and the Government of India (£500), and partly from contributions made by Dominion and Colonial Governments. Expenditure exceeded income by £450, the deficit being made up from an accumulated balance, and the Committee calls urgent attention to the necessity for supplying it with larger funds to deal with the many important questions calling for further research.

Appended to the report are the answers received from various Colonial Governments to a request for information as to the work in Colonial laboratories, and the Committee expresses its appreciation of the high standard of the work which is being done in these laboratories, work which shows the increased interest in research taken by the officers in charge. The experiment of setting up these laboratories, it is added, has fully justified itself, and deserves all possible encouragement. Reports are given also from the London and Liverpool Schools of Tropical Medicine for the year ending October, 1911, from the Professor of Protozoology in the University of London (Mr. E. A. Minchin, F.R.S.), and from Professor Nuttall, on the work done by the research student in entomology and in the Quick Laboratory of the University of Cambridge.

The reports from Colonial laboratories, though they do not deal solely with laboratory research strictly speaking, all illustrate the application of the scientific methods of the laboratory to hygiene and clinical medicine. The association is so close and the calls made by the public health administration and by the hospitals for assistance are so numerous that not a few of the directors lament that the fulfilment of their duties in these directions absorbs so much time that research work suffers. In fact, there is a call all through the report and appended memoranda for more money and more men to follow up the innumerable new tracks which are constantly being discovered, but cannot be adequately explored by the force available.

Not a few of the investigations reported to the

Committee, including those made by or under the direction of Professor Minchin, have already been recorded or noted in the JOURNAL. Among other matters of interest reference may be made to the observations of Dr. Castellani, Director of the Clinic for Tropical Diseases and the Bacteriological Institute, Ceylon, on a bacterium isolated from the intestinal contents in four cases of fever of obscure origin in which the results of all the investigations for the usual infections such as typhoid, paratyphoid, malaria, Mediterranean fever, etc., were negative. Dr. Castellani considers that this bacterium, to which he has given the name *Bacillus asiaticus*, is different from any other intestinal micro-organism. He isolated two varieties: one from two cases of protracted, rather low, intermittent and remittent fever, the other from two patients at first considered to be suffering from prolonged attacks of typhoid fever. Specific agglutinins were present in the blood in all the cases, the agglutination slowly decreased after the fever was over, and the blood of the patients did not agglutinate any other micro-organism. From experience in eight cases of yaws Dr. Castellani is enabled to express the opinion that salvarsan will be found of great benefit in that intractable disease.

The reports for the year ending September 30th, 1911, by Dr. A. T. Stanton, Acting Director of the Institute for Medical Research of the Federated Malay States (Kuala Lumpur), are chiefly concerned with an account of a chemical and physiological investigation of the relation of polished rice to beri-beri. Fowls fed on white polished rice known to have been associated with outbreaks of human beri-beri were found to develop a form of polyneuritis clearly analogous to beri-beri in its clinical manifestations and pathological effects, and were accordingly used as experimental animals. One of the conclusions which Dr. Stanton draws is that the harmful influence of white polished rice is not due to the existence in it of a poison developed after milling, but to a default in respect of some substance of high physiological importance essential to the maintenance of health. Other researches made in association with Mr. Barrowcliff, Assistant Government Chemist, made it probable that the substance is an organic acid, but the investigation of this point was not complete when the report was issued. As a practical test of whether a rice has been overmilled, the use of the phosphorous pentoxide standard is recommended, as no rice which yielded a phosphorous pentoxide content of 0.4 per cent., as estimated on the undried material, was found to be associated with human beri-beri or polyneuritis in fowls.

The report from Fiji is by Dr. Bahr, the delegate of the London School of Tropical Medicine, who, while acting as Honorary Pathologist to the Colonial Hospital, Suva, did a large amount of routine work and made special investigations with regard to dysentery and filariasis and elephantiasis. A report by Dr. Lynch, Chief Medical Officer, on an outbreak of dengue, is appended. The report from Jamaica, by Dr. D. J. Williams, Medical Superintendent of the Asylum, Kingston, is chiefly concerned with the occurrence of pellagra, which has been recognized in the asylum for the past twelve years. The observations do not conflict with the suggestion that the disease is disseminated by sand-flies. Dr. L. Nicolls contributes an interesting and well-illustrated report from the laboratory in St. Lucia (Windward Islands). He describes a fly which occurs in relation with ulcers, and is therefore known as the ulcer fly, and advances evidence tending to show that its prevalence is associated with the dissemination of yaws. He also reports the results of experiments with the small but prolific "millions" fish, a natural enemy of the mosquito. The reports from the Government Bacteriological Department, British Guiana, are by Drs. Minett and Wise. In a joint report they record certain experiences in the treatment of leprosy, which are commented on elsewhere under the head of British Guiana. The former has a note on unclassified fevers, many cases of which are to be attributed to heat exhaustion occurring in persons debilitated by repeated malarial attacks. The report from the Nairobi Laboratory, East Africa Protectorate, contains descriptions of certain trypanosomes found in the dog, horse, and the monkey, but the experiments were not completed at the time the report was made.

These notes will be generally held to justify the statements with which they were introduced: that much good work is being done, but that for its full development large resources and more workers are needed.

THE INSURANCE COMMISSIONERS AND THE ASSOCIATION.

A REPLY has not yet been received from the Joint Committee of Insurance Commissioners to the letter addressed to it on February 29th, informing the Commissioners "that unless the minimum demands of the Association be embodied in the Regulations to be issued by the Commissioners, in such a manner as shall be effectual and permanent, with a view to having the same embodied in an amending Act, it is the intention of the British Medical Association to call upon all its members and upon all other medical practitioners to decline to form panels or undertake any other medical duties which may be assigned to them under the Act." Some uneasiness is naturally felt at the absence of a reply, and though it may be true that the Commissioners may find some difficulty in dealing adequately with the points raised in the Association's letter, and may be under the necessity of giving them very full consideration before formulating a reply, a prolongation of the period of suspense will not conduce to a feeling of confidence, but rather tend to increase the sense of injustice which has already caused so much irritation. This is not likely to be diminished by the cavalier manner in which the Welsh Commissioners have invited the provisional Welsh National Medical Committee to send up at a few days' notice a list of ten names from which the Commissioners would select five persons to serve on the Advisory Committee for Wales. A meeting of the Executive Committee of the provisional Welsh National Committee was held at Shrewsbury on Wednesday to consider the application. It was felt that the Executive Committee was not in a position to select the names of members to be nominated to the Advisory Committee for Wales without consulting the Welsh Divisions of the British Medical Association, and the Secretary was instructed to write to the Welsh Commissioners to this effect, adding that it would probably be possible to transmit the names of those selected in about a fortnight. It was arranged that each of the eight Divisions in Wales should be asked to select one name. A strong feeling was expressed that the five members of the Welsh Advisory Committee should not be selected haphazard from a list of ten by the Welsh Insurance Commissioners, more especially as the Medical Commissioner had been a medical officer of health in England, and could not therefore be acquainted with the conditions of medical practice in Wales. It was laid down as a guiding principle that the five names transmitted to the Welsh Commissioners should be those of medical men representative both of the several parts of the Principality and of the various classes of practice which would be affected by the Insurance Scheme. The five classes of

practice for the representation of which it was considered necessary to provide were colliery practice, practice in steel and tin plate industrial districts, friendly society and Poor Law practice, private practice in industrial districts, and private practice in agricultural districts. The final selection will be made on this principle after the nominations of the eight Welsh Divisions have been received.

THE INSURANCE COMMISSIONERS AT WORK.

A WHITE paper (Cd. 6095)[1] has been presented to Parliament containing a brief statement of the preliminary steps taken with a view to bringing Part I of the National Insurance Act, 1911, into operation. The Act having provided for the constitution of National Commissions for England, Scotland, Ireland, and Wales and for a Joint Committee for the United Kingdom as a whole, the powers to be exercised by the Commissioners have been divided between the several bodies in the manner set out in the Regulations, which took effect on December 28th, 1911 (SUPPLEMENT, January 20th, p. 59), and February 21st, 1912 (SUPPLEMENT of this week, p. 313). The main principles on which the division of powers was made to assign to the Joint Committee all questions involving actuarial considerations of all matters with regard to which uniformity of practice throughout the United Kingdom is regarded as essential. Matters in which absolute uniformity may not be essential, though the action of the respective bodies of Commissioners will require to be co-ordinated, will be vested generally in the several bodies of Commissioners. All other matters will, as far as possible, be left to be dealt with by the several Commissioners independently. With regard to medical benefit, it is stated that the Joint Committee has appointed a Departmental Subcommittee, which has already held several meetings. It has had under consideration a preliminary report on the matters to be dealt with by the regulations to be made for medical and sanatorium benefit. These regulations will cover the entire arrangements to be made by the Insurance Committees for the medical treatment of insured persons, and are, it is stated, necessarily of a complex character, requiring careful deliberation. The Committee has also under consideration the question of the information to be issued to the public as to the provisions of the Act in respect to medical benefit and its administration. The desirability of issuing leaflets on the subject had also been discussed.

THE HONOURABLE HO KAI, C.M.G.

THE bestowal of a knighthood upon Ho Kai, M.B., C.M.Aberd., M.R.C.S.Eng., Barrister-at-Law, will be received both by the the Europeans and Chinese in Hong Kong with great satisfaction and pleasure. Ho Kai has for the past thirty years played an important part in the public life of the Colony, and in many ways benefited the community. On his arrival in England Ho Kai spent some time at Palmer House School, Margate, before he commenced the study of medicine at St. Thomas's Hospital Medical School, and afterwards he proceeded to the University of Aberdeen for the completion of his studies. During the period of his medical studies he also "ate his dinners" at Lincoln's Inn, and in the short period of five years obtained not only his medical degree and diploma, but also succeeded in obtaining admission as a barrister to practise in the English Courts. He returned to Hong Kong shortly afterwards, and took an active part in almost all the important developments of the Colony. In the field of medicine he succeeded in accomplishing a great and lasting work. Ho Kai married an English lady, Miss Alice Walkden, but to the great grief of a wide circle of friends, she died a few years after her arrival in Hong Kong. In memory of his wife, Ho Kai founded and endowed the Alice Memorial Hospital in Hong Kong, and handed the management of the affairs of the hospital over to the London Missionary Society, of which his father, the Rev. Ho Tsun Shin, was an active member. The opening of the Alice Memorial Hospital, with a European staff of surgeons and physicians, gave the Chinese an opportunity of being treated by modern methods of surgery and medicine, a benefit the large number which flocked to the hospital as soon as it was opened seemed to appreciate. The early members of the staff were Dr. (now Sir) Patrick Manson, Dr. William Hartigan, Dr. Jordan, and later, in 1887, Mr. James Cantlie and Dr. T. C. Thomson. A further benefit, however, to the Chinese was inaugurated in 1887, when the "College of Medicine, Hong Kong," was opened. A complete course of medical study, extending over five years, attracted Chinese students, and in 1902 the first diploma was granted. The famous President of the Chinese Provisional Government, Sun Yat Sen, was the first student on whom the diploma was conferred, and the college has every reason to be proud of having had within its walls the most humane of patriots who ever served any country. The success of the College of Medicine, due to the efforts of the several medical and scientific men who taught for years without pay or reward, stimulated the residents and Government of Hong Kong to widen the sphere of teaching to Chinese and others, and to found the University of Hong Kong in which the college of Medicine is now incorporated. Sir Ho Kai on his arrival in Hong Kong from England practised medicine, but in 1882, when called to the Bar, he gave up medical practice, and devoted himself to legal work. He proved a valuable member of the Sanitary Board, and for twenty years has been a prominent member of the Legislative Council. Amongst his manifold engagements, Sir Ho Kai found time to lecture on Forensic Medicine in the College of Medicine—a chair he was eminently fitted to fill by his medical and legal training. In 1902 Ho Kai was created a C.M.G., and his knighthood is a well-timed honour bestowed upon one who has given his time and great talents to the public good. We heartily join in congratulations to Ho Kai upon his knighthood.

TUBERCULOSIS AND PUBLIC TELEPHONES.

IN view of the importance of removing any possible source of infectious disease, the Postmaster-General some time ago requested Dr. Spitta, of St. George's Hospital and bacteriologist to the King, to undertake a thorough investigation to determine the possibility of the communication of tuberculosis through the use of telephones, and especially of those in public call offices. For this purpose a number of telephones which had been in use at busy call offices in London for various periods, and had received no special cleansing treatment other than that normally given to such telephones, were handed over to Dr. Spitta for examination. In accordance with the method usually followed in such investigations, washings were prepared from the mouthpieces of the telephones, and tests were made in each case by the inoculation of guinea-pigs to ascertain the presence of tubercle bacilli. Dr. Spitta's report on these experiments showed that the results were most satisfactory and that the mouthpieces examined were free from tubercle bacilli. The telephones which were used in this investigation had been removed from call offices in post offices, railway termini, meat markets, and other places of general resort. In order to remove any possible doubt as to the exhaustive nature of these experiments the Postmaster-General, on Dr. Spitta's advice, decided to have further experiments made with telephones which were known to have been exclusively used by persons suffering from pulmonary tuberculosis. For this purpose it was arranged that telephones should be fitted in the wards of a sanatorium and used only by patients in

[1] This number identifies the document, and if given to a bookseller ought to enable him to obtain it in the ordinary course of trade from the official publishers. Most other official documents bear such an identifying number.

different stages of pulmonary tuberculosis, and that the instruments should be used in this way for varying periods of time and should not be cleaned or disinfected during the course of their experimental use. These telephones were forwarded to Dr. Spitta at intervals, with all necessary precautions to prevent any alteration in their condition, and were subjected to the same bacteriological experiments as the telephones previously removed from public call offices. The investigations were continued during the year 1911, and the Postmaster-General has received a final report from Dr. Spitta showing that the results have been entirely negative. Dr. Spitta states that he is of opinion, in view of the whole course of the experimental work, "that the transmission of tuberculosis through the medium of the telephone mouthpiece is practically impossible." These results are supported by an independent inquiry initiated some time ago by the American Government as to the condition of public telephones in the United States. As statements are published from time to time as to the possible transmission of tuberculosis by the use of telephones, the Postmaster-General is glad to be able to announce the satisfactory results of these experiments. They fully confirm the results of work carried out by Dr. Klein, of St. Bartholomew's Hospital, in 1905, at the instance of Dr. Collingridge, the City Medical Officer of Health, who caused a number of telephones in use at call offices of the National Telephone Company to be removed for bacteriological examination. Some alarming public statements as to the possibility of infection had been made at the time, and Dr. Collingridge thought it his duty to investigate the subject. As a result he arrived at an identical conclusion: that there was no real risk in the use of telephones at public call offices, and that the alarm which had been raised had no foundation in fact.

HOSPITAL CLINICAL LABORATORIES.

SOME two years ago the authorities of St. George's Hospital made a slight alteration in their method of keeping accounts between themselves and the attached medical school,[1] and instead of making all payments found to be due out of the Discretionary Fund at their disposition, charged to the general fund of the hospital the amount credited to the school as a return for pathological work undertaken by it on behalf of the hospital. This sum was shown in its accounts when making application to King Edward's Hospital Fund for London, and the propriety of the amount thus entered was questioned. An investigation followed in which each party maintained its view, and which ended in the King's Fund deciding in favour of its own after a somewhat futile attempt to compare the expenditure on pathological work at St. George's Hospital with that of other institutions. The net outcome was that at the distribution meeting of King Edward's Fund held last December,[2] it was announced that St. George's Hospital had submitted no application for an award for the current year, and also that the grant contingently made for the previous year had been annulled. A further result was that at the corresponding meeting of the Metropolitan Hospital Sunday Fund,[3] which was held shortly afterwards, this fact was mentioned, and it was suggested that the fund ought to fall into line with the authorities of the King's Hospital Fund in the matter. The discussion which followed ended in a decision that payment of the grant proposed by the Distribution Committee should depend on a report which the Lord Mayor of London promised to supply after a personal investigation of the matter. This promise Sir Thomas Crosby duly carried out, and his report was read at a special meeting of the governors of the Fund on March 7th. It was to the effect that he had examined the expenditure involved by the maintenance of the bacteriological and pathological departments of the school, the amount of work which they did for the hospital, and the proportion of the total expenditure on each bed represented by the sums credited to the school for inquiries of a bacteriological, pathological, and chemical character. He had also examined statistics obtained from other hospitals relative to their own expenditure in the same direction. The result was that he was convinced that the amount expended at St. George's Hospital on the investigations in question was not excessive in itself, and did not represent a larger cost for each occupied bed than the corresponding expenditure at many other London hospitals. The latter fact was, however, difficult to show in precise figures, because the fashion of keeping the accounts relating to pathological and bacteriological work varied at different institutions, the items included or excluded being not always the same. Sir Thomas Crosby also pointed out that at St. George's Hospital all reports upon material sent for examination were furnished personally by the officers in charge of the bacteriological and pathological departments, and not by students, house-physicians, or house-surgeons, and that the work done included a variety of chemical examinations, the preparation of vaccines, and the care of the museum, which was the property of the hospital itself. He also added that the investigations under consideration involved processes which could only be efficiently carried out by skilled and highly trained officers, who must be paid appropriate salaries, and that they were essential to the proper diagnosis and treatment of the patients in the hospital, and quite as necessary to their welfare as that performed in the electrical, *x*-ray, and other departments. A short discussion followed the reading of the report, and ended in its acceptance, and in a vote of thanks to Sir Thomas Crosby for the trouble he had taken in the matter. During its course Sir Dyce Duckworth and other speakers emphasized the fact that money spent on clinical laboratories, whether paid out of the ordinary or discretionary funds at the disposition of hospital authorities, was spent entirely for the benefit of patients, and that any belief that it went towards the education of medical students was entirely erroneous. Sir William Church also pointed out that there had never been any accusation against the hospital authorities of having done anything which was improper.

THE BALFOUR PROFESSORSHIP OF GENETICS.

IN a letter to the Vice-Chancellor of Cambridge University Lord Esher has made the interesting announcement that an anonymous benefactor has placed in Lord Esher's hands a sum of £20,000, for the purpose of endowing a professorship at Cambridge in connexion with the experimental study of heredity and of development by descent. He states that towards the end of last year a meeting was held in Mr. Balfour's house in Carlton Gardens of a few representative members of the University of Cambridge interested in the subject. At this meeting a short paper written by Mr. Balfour in July, 1910, dealing with the endowment of the study of genetics in the University of Cambridge, was considered. It is stipulated that the new chair shall be called the Balfour Professorship of Genetics and that the first appointment shall be made jointly by the Prime Minister and Mr. Balfour. It is also stipulated that the regulations governing future appointments to the chair and the functions of its incumbent shall be submitted through Lord Esher to the anonymous benefactor before the endowment fund is placed in the hands of the University. The benefactor is also willing to furnish such funds as may be necessary to provide and equip a small station at Cambridge for the use of the professor, should such a course be considered desirable after careful examination of the methods likely to be most satisfactory for the purposes of research in the domain of genetics. In 1908 the

[1] BRITISH MEDICAL JOURNAL SUPPLEMENT, December 24th, 1910, p. 463.
[2] BRITISH MEDICAL JOURNAL, 1911, vol. ii, p. 1672.
[3] BRITISH MEDICAL JOURNAL, 1911, vol. ii, p. 1709.

teaching of genetics at Cambridge was entrusted to the professor of biology, Mr. William Bateson, now director of the John Innes Horticultural Institution. In 1910 Mr. Bateson was succeeded by Mr. R. C. Punnett. The stipend of the holder of the chair of biology was largely provided by the munificence of an anonymous donor, and it is understood that this benefaction would have been exhausted within the next year or two. The munificent offer now made will establish the teaching of genetics at Cambridge on a permanent basis.

THE MEDICAL SOCIETY OF LONDON.

THE 139th anniversary dinner of the Medical Society of London took place on March 6th and was attended by the presidents of nearly all kindred societies in the metropolis as well as by those of the Royal College of Physicians and the Royal College of Surgeons. In proposing the toast to "The Medical Society of London," Dr. Mitchell Bruce, who was in the chair, said that in view of the exhaustive historical orations which had been delivered on previous like occasions it was hopeless for him to attempt to be original. As a personal experience, however, he could record the fact that previous to his election to the position of President of the Society he had been somewhat of an outsider in its affairs, and that since he had had occasion to attend all debates he had been continually impressed by the keenness shown thereat and the evidence of a real desire to advance both medicine and surgery. If that spirit were maintained in the years to come, success was assured. The average attendance at meetings was forty, and the society's financial position was happy. Its loss in eminent men had recently, however, been very heavy, for it included Dr. Pavy, Dr. Hughlings Jackson, Sir William Allchin, and the immortal Lister, who was elected a Fellow in 1878, Orator in 1892, and later on an Honorary Fellow, and so remained until his death. Mr. Bland-Sutton, with whose name the toast was coupled, described the society as floating buoyantly on the sea of success. It was a fact on which he could congratulate its Fellows, since they were strong on maintaining its autonomy, instead of following the example of other like bodies and allowing it to be decoyed into the harem of the Royal Society of Medicine. The toast to "The Guests and Kindred Societies" was coupled by its proposer, Dr. T. B. Hyslop, with the names of Mr. R. J. Godlee, President of the Royal College of Surgeons, and that of Lieutenant-Colonel Sir W. B. Leishman, R.A.M.C., President of the Society of Tropical Medicine and Hygiene. In the course of his reply, Mr. Godlee, in referring to the death of his distinguished uncle Lord Lister, stated that the latter had expressed a desire that the books in his possession should be given to the Medical Society of London after a choice from among them had been made by certain relatives. Among the books were a considerable number of seventeenth and eighteenth century publications, so that the gift would form a useful addition to the Society's library. The two final toasts were to "The President," which was submitted by Sir Lauder Brunton, F.R.S., and to "The Honorary Secretaries," Dr. Carr and Mr. Corner, to whose work, as well as that of the Registrar, Mr. Bethell, a very warm tribute was paid by the President.

SHETLAND PATRONYMICS.

THE origin of British names, always a question of considerable interest, often affords a striking proof of the mixture of races from which the modern Briton has sprung. This constant intermingling of alien blood is very strongly marked in Scotland, where Celt and Saxon, Norseman and Pict has each in turn left his trace on the nomenclature of the Scottish people. An interesting example of the evolution of a British surname is furnished by the family tree of Dr. R. Cunyngham Brown, the new Deputy Commissioner in Lunacy for Scotland. Dr. Cunyngham Brown, who is a son of the late Rev. Robert Brown, a native of Paisley, and nephew of the well-known Rev. Joseph Brown, D.D., of Glasgow, is descended, on the mother's side, from one of those ancient Shetland families so charmingly portrayed by Scott in *The Pirate*, who appear to have been the very last in the British Isles to conform to modern ways and adopt a fixed patronymic. In "this ultimate dim Thule" old customs die hard; and the habit of using the baptismal name of the father as the surname of the children survived almost to our own times and is apt to prove a fruitful source of confusion to historians. Thus, we find that Dr. Cunyngham Brown's maternal ancestors, the Hoseasons of Aywick, were descended from a certain Sjovald of Aywick, who was succeeded by his son Laurence Sjovaldson, who in his turn gave place to a son called John Laurenson, Fowde (or Lawgiver) of the island of Yell, under Earl Patrick Stewart, at the beginning of the seventeenth century. In the next generation the family name becomes Johnson, and some years later is transformed into Andrewson by Hosea (pronounced Osie, a corruption of Oswald) Andrewson of Aywick, whose great-grandson, James Hoseason, was the grandfather of Dr. Cunyngham Brown. It will be seen, therefore, that for nearly 300 years the property of Aywick was in the somewhat unusual position of being held by the same family, of whom no more than three members bore the same surname.

POSTAL DELAYS.

A NOTIFICATION has been received from the Post Office to the effect that owing to the suspension of trains due to the coal strike there may be unavoidable delay in the delivery of newspapers and periodicals and of all classes of correspondence. Every effort will be made to dispatch this and subsequent issues of the JOURNAL during the strike at an early hour, but members will be good enough to take note of the official Post Office notification.

DR. T. ARTHUR HELME has resigned the office of Honorary Treasurer of the National Medical Union.

WE regret to have to record the death, after a short illness, of Sir Richard Brayn, Home Office expert in lunacy, and formerly medical superintendent of Broadmoor Asylum. We hope to publish some account of his career in an early issue.

THE relatives of the late Lord Lister wish to offer their sincere thanks for the many letters and messages of sympathy which they have received from public bodies and from private individuals in this country and abroad, and to express their appreciation of the honour which has thus been rendered to his memory. They make this acknowledgement fearing that some of the messages may inadvertently remain without particular answers.

THE Princess Henry of Battenberg has consented to become a vice-patron of the Chelsea Hospital for Women.

AT the quarterly meeting of the governors of the London Hospital on March 6th it was announced that, as it was impossible to foresee what would be the precise effect of the Insurance Act upon the finances and work of the hospital, the authorities had resolved that no change in its system should be made for one year after the benefits of the Act had come into force, and that at the end of that time the question of any modification should again be reconsidered in the light of the actual experience thus acquired.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

Second Meeting.

(Continued from page 571.)

THE following is a continuation of a report of the meeting of the State Sickness Insurance Committee on March 7th, which could not be completed last week (pages 570–571):

WOMEN ON THE JOINT ADVISORY COMMITTEE.

A communication was received from the President of the Association of Registered Medical Women, Dr. Constance Long, stating that that association had been invited by the Joint Committee of Insurance Commissioners to send in the name of three or more medical women for appointment upon the Joint Advisory Committee, and that the Association of Registered Medical Women had nominated Dr. Constance Long (London), Miss Mary H. F. Ivens, M.S. (Liverpool), and Dr. A. Mercer Watson (Aberdeen). The association had further decided that the names should not be forwarded to the Joint Commissioners until they had been reported to the State Sickness Insurance Committee of the British Medical Association. Dr. Constance Long stated that the nominations had been made on the clear understanding that the members nominated had, in the terms of the resolution of the Representative Meeting, pledged themselves to vacate their seats on the Advisory Committee should the British Medical Association determine to cease negotiations with reference to the National Insurance Act. After hearing this statement the Committee approved the nominations.

REMUNERATION.

A subcommittee on remuneration was appointed consisting of Dr. J. Adams (Glasgow), Dr. R. M. Beaton (London), Dr. S. Hodgson (Salford), Dr. James Pearse (Trowbridge), Dr. D. F. Todd (Sunderland), with the chairman, Mr. T. Jenner Verrall.

This subcommittee was instructed to report generally upon the subject of remuneration, and in particular on the data received at the central office from many medical men in response to the appeal for such information. This subcommittee was also instructed to report on various motions by Divisions on the subject, referred by the Representative Meeting.

CO-OPTION.

It was resolved not at present to exercise further the power of co-option possessed by the Committee. The Committee has power to co-opt two other members, and it was considered that circumstances might arise in the future, not at present possible to foresee, which would render it desirable to co-opt members possessing special information on various subjects.

ADMINISTRATION OF MEDICAL BENEFIT.

The following resolution of the Special Representative Meeting (February) was read:

> That this meeting urge the Council to take every step to secure that medical benefit shall not be under friendly society or Insurance Committee control, but be administered for insured persons by the Insurance Commissioners.

A member of the committee urged that the Association should approach the Insurance Commissioners directly, and independently of the Joint Advisory Committee. After discussion it was resolved to postpone the further consideration of this minute and of the suggestion.

ORGANIZATION OF THE PROFESSION.

The Committee proceeded to consider the following minute of the Representative Meeting:

> That the Council be instructed to take steps to organize the profession so as to secure that, failing the provisions of adequate remuneration of medical practitioners and the fixing of a definite wage limit under the National Insurance Act, no medical practitioner shall give medical or surgical treatment to persons insured under the Act under a contract practice appointment held at lower rates than those which may be agreed upon as adequate by the Representative Body after reference to the Divisions for attendance upon insured persons, and that no contract practice be introduced into any district against the wishes of the majority of the members in that district. Further, after obtaining the adequate rate, the Representative Body shall insist that before any member of the profession can agree to accept work under a contract appointment, free choice of doctor by patient and of patient by doctor must be granted.

Reports on the general subject of the plan of campaign for the future, on the steps taken in the metropolitan area with regard to the lines on which provisional medical committees might best be formed, and on the relation of the areas of the Branches and Divisions of the British Medical Association to insurance areas were read. A discussion took place, during which it was made evident that the adjustment of the Association areas to insurance areas would involve a good many practical administrative details, and the Acting Medical Secretary was directed to bring up a report at the next meeting of the Committee based on the principle that provisional committees, including non-members, shall be formed in each Division, in co-operation where deemed desirable with the Branch Council, without reference to the areas to be covered by statutory medical committees, except in so far as these provisional committees may be asked to advise as to the formation of statutory committees.

INSTITUTIONAL TREATMENT.

A preliminary report by the Hospitals Subcommittee on the minute of the Representative Meeting referring to the Council for consideration the subject of institutional treatment, together with motions of which Divisions had given notice, was read, and it was resolved to discuss the matter further at an early meeting when the report of the Hospitals Subcommittee had been considered by the Hospitals Committee.

PUBLIC MEDICAL SERVICE.

The following resolution of the Representative Meeting was read:

> That the Council be instructed to direct the attention of Divisions to the desirability of preparing a scheme for a Public Medical Service to be administered by the medical profession in each insurance area.

After a brief discussion of this subject the Committee resolved to continue its consideration along with the report on the medical organization of the profession, to be presented to the next meeting of the Committee.

The meeting adjourned at 6 p.m.

Third Meeting.

The third meeting of the State Sickness Insurance Committee was held on Thursday, March 14th, at 10.30 a.m.

We are compelled to defer the publication of the report of the further proceedings of the Committee on that day until our next issue.

THE ASSOCIATION AND ITS MEMBERSHIP.

A RUMOUR is floating about, and as we gather is being sedulously propagated in certain quarters, that the membership of the British Medical Association is dwindling. It is not difficult to conjecture how this rumour has arisen; it may be taken as an illustration of the words of the poet that the wish is father to the thought. Sir Clifford Allbutt, at a meeting of the British Medical Benevolent Fund held at the Mansion House, on March 13th, pointed out that the Insurance Act would make such a serious difference to doctors that in a few years practices would be unsaleable. Doubtless there are what Carlyle called "official persons" who would like to persuade themselves and the public that the Association, which has striven so vigorously to safeguard the interests of the profession threatened by that well-meant but badly-digested measure, is becoming weaker in numbers. It may therefore be of interest to the Government as well as to the profession to make known the true state of things, as shown by hard figures, of the accuracy of which there can be no question. At the end of 1910 the wastage from deaths, resignations, and other causes, was 661; at the end of 1911 the corresponding figures were 716, showing an increase of only 55 on an increased membership of about 4,000 on the year. Turning to the figures for the present year, the increased membership up to the present time is 1,019, as compared with 610 in the corresponding period of 1911. These facts speak for themselves. The Association has never been in so flourishing a state as it is at the present time.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

Insurance Act.

Sanatoriums for Scotland.

The Marquess of Tullibardine asked the Secretary for Scotland whether the Local Government Board proposed issuing an Order in terms of Section 64 of the National Insurance Act before the Committee appointed to report upon the general policy in respect of the problem of tuberculosis had made their report. Mr. Masterman answered that in accordance with Section 64 (1) of the National Insurance Act the proportion of the total sum available in accordance with that section for providing or maintaining grants to sanatoriums and other institutions which was allocated to England, Scotland, Ireland, and Wales respectively would depend upon their populations as shown in the census of 1911. The allocation of the sum so available for Scotland would rest primarily with the Scottish Local Government Board, and he understood was now under its consideration. The Marquess of Tullibardine asked the Secretary to the Treasury what proportion of the £1,500,000 available for the purpose of providing sanatoriums would be available for Scotland; and whether it would be allocated among counties and burghs on the basis of population, or whether it would be pooled. Mr. Masterman replied that, in accordance with Section 64 (1) of the National Insurance Act the proportion of the total sum available in accordance with that section for providing or maintaining grants to sanatoriums and other institutions which was allocated to England, Scotland, Ireland, and Wales respectively would depend upon their populations as shown in the census of 1911. The allocation of the sum so available for Scotland would rest primarily with the Scottish Local Government Board, and he understood was now under their consideration.

Maternity Benefit.

Mr. Rowntree asked whether under Section 8 (6) of the National Insurance Act an insured woman was entitled to sickness benefit in respect of her confinement for four weeks, even if she was not incapable of work during the whole of that period. Mr. Masterman replied that an insured woman would receive maternity benefit of 30s. on confinement. An insured married woman would receive sickness benefit for so long as she was incapable of work. The Factory and Workshop Act, 1901, prohibited the employment in a factory or workshop of any woman within four weeks after childbirth; but if the woman was certified to be incapable of work for a longer period she would continue to receive sickness benefit.

National Health Commissioners.

In reply to Mr. Amery, the Secretary to the Treasury said that a circular was issued some weeks ago through the Income Tax Department inviting members of the outdoor staff of that department to apply for appointments under the National Health Insurance Commissioners, and a number of the outdoor staff did in consequence apply for such appointments. Twenty of the applicants were recommended to the Insurance Commissioners, who had these applications with others under consideration, but had not as yet made any appointments therefrom. Two of the persons appointed to the higher staffs of the Commissions were surveyors of taxes who had previously been at work upon the bill in the Treasury.

Operation of Act.

Mr. Fred Hall asked the Secretary to the Treasury whether he was now in a position to state the date on which it was proposed that the National Insurance Act should come into force; whether such date would relate to the whole of the United Kingdom; and, if not, whether the working of the measure would be suspended in those districts which had shown themselves to be not yet ready for its provisions. Mr. Masterman replied that he knew of no reason why the health insurance part of the National Insurance Act should not come into operation on the date given in Section 115 of the Act—namely, July 15th, 1912. It was not intended that the date should vary in different parts of the United Kingdom. The Board of Trade as at present advised proposed to bring the unemployed insurance part of the Act into force on July 15th next for the United Kingdom as a whole.

Insurance Commission Appointments.

Mr. Harry Lawson asked whether any appointments from outside the Civil Service had been made to any particular posts under the Insurance Commission that had not been notified to the newspaper Press, in accordance with the terms of the circular issued by Sir Robert Morant, dated December 14th, 1911. Mr. Masterman said that the appointments made by the Commission with previous occupations were shown on page 8 of the White Paper, Cd. 6095. Certain legal and actuarial appointments in England and Ireland; the private secretaries of the Chairmen; in England one and in Wales three emergency appointments were made from outside the Civil Service under conditions which he had already explained in the debate of February 29th. All the remainder have been made from the Civil Service (in one case an ex-Civil servant). The Commissions were now considering the best method of dealing with any further appointments that might be required outside the Civil Service. Asked why these appointments were not notified, he said, so far as the appointments connected with Sir Robert Morant were concerned, two gentlemen were at work in the Insurance Commission before the statement was made. They were emergency appointments.

Sanatorium Benefit.

Mr. Lynch asked the President of the Local Government Board whether his attention had been directed to the correspondence between the Chairman of the Committee on Tuberculosis and Professor Karl Pearson, who wrote that it would be waste of time to prepare and submit a memorandum; whether he had considered the complaint of Professor Karl Pearson that the Committee was not sufficiently representative on the side of pathology, of clinical knowledge, and of the science of statistics; and whether, in view of the importance of the questions that would be considered—as, for instance, the allotment of sums of money to sanatoriums and to research work respectively—and of the necessity of obtaining the advice of the highest scientific authorities on tuberculosis, he would entertain the suggestion of increasing the strength of the Committee in the directions indicated. Mr. Masterman said that the answer to the first two paragraphs was in the affirmative. The composition and size of the Committee on Tuberculosis and Sanatorium Benefit were determined by the necessity of securing upon it representatives of each of the various Government departments involved, together with gentlemen practically concerned with various types of sanatoriums. The special subjects referred to in the question would be dealt with by obtaining assistance from expert witnesses. The Chairman of the Committee had already taken the requisite steps for this purpose, which included among them the request made to the distinguished scientist already referred to.

Poor Law Administration.

On Monday last, when the vote on account for some thirty millions for the Civil Service was before the House of Commons, Mr. Jowett started an important debate on the work of the Local Government Board.

Mr. Jowett described the President, Mr. John Burns, as a cheery and optimistic person, a very Mark Tapley in the political world. He did not share the satisfaction felt by the right honourable gentleman, who told them that the number of persons in receipt of Poor Law relief was continually diminishing. This diminution was due to causes for which they could hardly give him credit. He had held his present position during a time of unparalleled prosperity. Another cause of the recent diminution was the giving of old age pensions, but the President of the Local Government Board had no right to remain satisfied because old age pensions had removed from the list a number of people in receipt of outdoor relief. A further influence, to which he took the most serious objection, was the discouragement by all kinds of methods,

direct and indirect, of the granting of outdoor relief. This policy, generally known as "the Whitechapel system," put before the poor the alternative of the workhouse or no relief at all. The result of this system was indicated in the return which was made to the House of the number of deaths from starvation, which showed that in 1910 there were 119 such deaths, and that 11 of them took place within the boundaries of the union which had given its name to the system. It was the desire of the Local Government Board to extend this system, and the President was proposing to issue a new Order which would have this effect throughout the country. If this Order became operative, the result, as he understood it, would be that no Poor Law authority would be enabled to take advantage of the modified conditions under which outdoor relief could now be granted unless the Local Government Board approved. That was a centralization proposal to which many objected. The effect of the tightening up of the conditions under which outdoor relief was granted had been not only to increase the cost of Poor Law relief, but also to increase the amount of unrelieved destitution in the country. After quoting statistics and cases illustrating the views he held, he concluded with a very earnest appeal against any general adoption of the Whitechapel system.

Mr. Lansbury followed with a general criticism of the work of the Board, and especially complained of the waste of money in dealing with children, who were still underfed, underclothed, and badly housed. As regards Hollesley Bay Colony, he defended the system of labour colonies. He wished to see a uniform system of Poor Law contracts adopted in London, and in order to get a common method of certifying lunatics, and suggested that the salary of the medical officer should include the certifying of lunatics.

Mr. Hills, who followed, said that the present Poor Law administration had not a single friend in the House except the President of the Local Government Board.

Mr. Crookes spoke against the strict enforcement of the destitution test, and advocated very strongly the freer use of outdoor relief, in order to save the home and prevent the breadwinners sinking to the lowest depths.

After useful speeches by Lord H. Cavendish-Bentinck, Lord A. Thynne, Sir J. Spear, and Mr. Richardson, Mr. Long, as an ex-President of the Board, expressed his profound regret that this might be the only opportunity this session of discussing the Poor Law problem, which was of such vast importance to the mass of the people. He called upon the Labour party to act with more vigour and more independence. He warned the House of the danger of too liberal outdoor relief, but he thought it should be used so as to prevent the manufacture of paupers. He was not sure that the transference of the children from the Poor Law to the education authority was the wisest course, but he was in favour of experiments being made by Unemployment Committees, and he was sorry that Mr. Burns seemed to take an opposite view. The treatment of the feeble-minded and vagrants urgently demanded attention.

Mr. Burns, in his reply, said he was disappointed with Mr. Long's criticism, and deplored the absence of opportunity for discussion on Poor Law problems, but that was not the fault of either Mr. Long or himself. It had been suggested that there had been an attempt on the part of the Local Government Board to restrict the number of recipients and the amount of relief given. His reply was that the contrary was the case. By order, by circular, by inspection, and by advice, he had urged adequacy of relief. There was no evidence that any bodies other than the guardians wished to undertake the duty of administering poor relief, and, as no one had asked for the creation of new bodies, he, as a practical, simple, energetic man, had been bound to utilize the existing means. One speaker that day said: "The President of the Local Government Board, by a wise system of co-operation, had done a great deal." That was true. Some members might think that immodest of him, but modesty was only for those that had no beauty. An enormous amount of poor relief had been done in the past, and more was being attempted. To the right hon. gentleman who had said "We must be careful not to manufacture paupers," he would point out that many attempts to grapple with the problem had been made in the last century. Between 1800 and 1840 generous outdoor relief was tried, and it was found that, instead of diminishing pauperism, it invariably increased it, acting as a bonus in favour of low rates of wages, and ending in universal demoralization, and in some parishes producing actual bankruptcy. The second attempt was the institution of indoor relief, which was not agreeable to many and was not sufficiently discriminating in the treatment of cases. A third attempt was made in later years by starting relief works. These, it was admitted, not only did no good, but stereotyped the casual conditions of employment which they were supposed to remedy. The most recent attempt had taken the form of the establishment of labour colonies. He had visited every labour colony in the world except one in Switzerland. Labour colonies were not economical; they were not deterrent, for experience showed that from 90 to 95 per cent. of the persons who had been in them returned in a worse condition than they were before; and morally, mentally, and industrially men were worse by reason of their stay in one of those colonies. That was the experience which he had gathered in America, Germany, France, and elsewhere. In regard to the care of the feeble-minded, pending legislation on the initiative of the Home Office, he had done his best to get local authorities to act in combination in the matter. To deal with vagrancy was a task only partially within the jurisdiction of the Local Government Board; but in regard to that portion he had taken London as the most fruitful area for experiment, for London was the rendezvous at some time during the year of 75 per cent. of all the habitual vagrants in the country. Much to the regret of some timid reformers, twenty-eight casual wards to which vagrants resorted had been taken from the administration of boards of guardians and handed over to the Metropolitan Asylums Board, so that a register of vagrants might be kept, and means might be devised to reinstate the better men among them in the industrial sphere, and preventive measures might be adopted in regard to others. There were now about 100 children over 3 years of age in London workhouses, all the others having been removed to more suitable homes and institutions. In England and Wales thirty-seven boards of guardians intended to do what had been so successfully done in London, and the Poor Law Children's Association had no criticism to make of the means by which the Local Government Board was rapidly accelerating the removal of all children over 3 years of age from the workhouse. The guardians had it within their power to increase the amount allowed for boarding-out children, and he admitted that 2s. 6d. a week for the foster-mother for the maintenance of a child was insufficient. But it was not money alone that governed the boarding-out of children in cottage homes. They were generally well treated; they were not overworked; and, in the opinion of the larger number of lady inspectors, there were very few instances of cruelty or brutality. Where a man and a wife had no children, the money, although, perhaps, it might not be sufficient, was not a consideration at all; it was the human element, the elevating effect of the child, which was worth more than the 2s., 3s., or 4s. a week paid for it, and he was delighted to say that an increasing number of people, rich and poor alike, were adopting Poor Law children. If he had his way he would make it compulsory for a woman who kept more than two cats and one dog to adopt a Poor Law child, to which she could divert some of the affection, a great deal of the cash, and nearly all the wasted sentiment that many people expended on animals to an extent that was absurd. Like the hon. member for Poplar, he was a member of a very large family, and if his mother had received 2s. 6d. a week for the first child and 1s. for each succeeding one she would have been better off than the average agricultural labourer who had to maintain his wife and family and pay his rent. The statement that 2s. 6d. was insufficient must be qualified by the facts he had mentioned, and unless some limit was put on outdoor relief there was a possibility that it might be considerably in excess of the average wages of the agricultural labourer in the district in which children were boarded out, so that the effect would be to diminish the spirit of independence and to do more harm than good. The number of children over 3 years in workhouses at present was something like 8,000, or 12 per cent. less than last year, and 25 per cent. less than three years ago. If the country guardians would do what London

had done there was no reason why in three years' time the same result should not be achieved. The average Poor Law boy in Poplar Poor Law school cost 19s. a week, or 3s. 6d. a week more for maintenance than the average wage of the agricultural labourer with a wife and five children. The cricket fields, the tennis courts, the opportunities for games, the baths, the comforts of the Poor Law child were infinitely better than at many of the best public schools. What was the effect of this system of education on the boys? Out of 12,000 boys and girls turned out from the Metropolitan Poor Law schools in ten years, only 48 were returned to the guardians for inability to earn their living or for bad behaviour. In 1851, only ten years before the hon. member for Woolwich was badly treated by the board of guardians, it cost £5 6s. 5d. to maintain a pauper per annum; it now cost £17 0s. 11d. To say that the new Poor Law Order was an attempt to apply the Whitechapel system of in and out relief to all the unions was an absurd travesty of the facts. In the last six or seven years the out-relief per recipient had increased from £4 9s. to £9 15s. But unless the power given to guardians by the new Order prevailed there would be an opportunity for guardians in some cases to do as they liked. It would not be the Whitechapel system that prevailed, but the opposite. With a more rigorous system of administration, Poplar was spending less on relief than last year, £45,000 less than five years ago, and £61,000 less than six years ago, and Poplar in that period had reduced its paupers from 11,657 to 7,000. Old-age pauperism, 70 years or upwards, had been diminished by the following percentages: In three years it had gone down 21 per cent. indoor, 95 per cent. outdoor; and 75 per cent. of the total decline in three years was due to pensions mitigating pauperism, diminishing the number of actual people in receipt of outdoor relief, and, better still, laying hold of the increment of potential paupers, taking them from the workhouse, and making them honourable, independent recipients of State bounty without any association with the Poor Law. In pensions, sanitary grants, road boards, Development Commission grants, feeding of children, and medical inspection the Government was to-day spending 15 millions more money in dealing with pauperism and cognate problems than three years ago. He had listened to all the criticisms of hon. members, and where they could be reasonably adopted without pauperizing the people and over-burdening the ratepayer he would do his best to adopt the suggestions. Where they could get in an inclusive salary the Poor Law officer to certify lunacy he believed it should be done, and he was engaged in doing this wherever it could be arranged. In respect to the relief to children, it was true that there had been overlapping, but he believed that it would soon cease. No suggestion had come from the County Council as to overlapping, or as to how the waste of money should be stopped. The children got more food and more meals now than they might get under the suggestion of the London County Council, with its cheese-paring habits and economical policy in the matter of trams and other things. He admitted, however, that the overlapping ought to be stopped and the waste of money prevented, with a due regard to making the parents help their children. There should be fewer authorities to deal with the matter than was the case now, and he was working in that direction. He had given the facts and figures in regard to Hollesley Bay, and he had shown how the money had been voted and spent. In his judgement, however, the money spent on Hollesley Bay and other labour colonies did not warrant voting much more public money for the support of these labour colonies. They had been provided with ample money and with cottages where necessary, and had enjoyed many privileges and concessions. The result was that at the end of five or six years £160,000 had been spent on Hollesley Bay; 7,000 men had passed through the colony, and, apart from those emigrating, only nineteen had secured employment on the land. The time had arrived when even those who supported Hollesley Bay would admit that the colony must be put to a purpose which would be quite as good and in some respects more useful.

The debate was interrupted at this point to allow private business to come on, and afterwards Mr. Ormsby Gore and Mr. C. Bathurst spoke, and the vote was passed without a division.

Vivisection.—Mr. Snowden asked whether the Dr. Klein, who conducted experiments in regard to rat plague in Suffolk in October, 1910, was the same Dr. Klein who gave evidence before the Royal Commission on Vivisection on October 28th, 1875, and stated that he had no regard at all for the sufferings of the animals on which he experimented; whether he was the Dr. Klein who experimented upon thousands of animals, such as pigs, rabbits, horses, guinea-pigs, rats, cats, monkeys, calves, cows, and mice, and had described his experiments in various reports to the Local Government Board; whether he was still employed by the Board; and, if not, when his engagement terminated. Mr. Burns said the reply to the first and second inquiry was in the affirmative. He might observe, however, that Dr. Klein stated in 1875 that the evidence, as printed, did not express his real intentions. He might also point out that any experiments carried out for the Local Government Board had been subject to the condition that no experiments on living animals were to be conducted at the cost of the State without the employment of anaesthetics in the case of painful operations, nor without a report from time to time explaining the object of any such experiments and showing the necessity for the purposes of discovery. The only connexion which Dr. Klein now had with his Department was that he acted as an occasional consultant in regard to the examination of doubtful specimens of suspected plague material.

Appropriately enough, on the evening of the day on which the report of the Royal Commission was published, a short debate on vivisection arose in the House of Commons. It happened that the votes were agreed to rather early, and Mr. Wheler's motion on the cost of living was ruled out of order, and just before 8.30 Sir F. Banbury was able to move "That in the opinion of this House no operation for the purpose of vivisection should be performed on dogs." The hon. baronet said he was not opposed to vivisection on other animals, but his contention was that the dog, as peculiarly the friend of man above all other animals, should be immune from the torture of experiments. He quoted from the report of the Royal Commission to show that there was not a consensus of opinion among eminent surgeons and physicians that it was either right or necessary to use dogs for this purpose. Colonel Lockwood seconded the motion. As a member of the Royal Commission, he said that he was one of those who objected to dogs being used for the purposes of vivisection. He laid stress on the fact that the evidence submitted to the Commission showed the wide diversity of opinion prevailing among doctors and scientific men as to the need for carrying out experiments on dogs. He maintained that the evidence of distinguished physiologists went to show that, though the House might be slightly in advance of scientific opinion if they passed the resolution of the hon. baronet, the great preponderance of opinion was in favour of exempting dogs. The House would, in his opinion, be acting well within its province if it adopted the resolution. Mr. McKenna said that a Royal Commission had been investigating this subject for six years, and its report had appeared for the first time that morning. He had only had an opportunity of perusing that report very cursorily, and he told the House at once that the motion placed him in great difficulty, for he was asked to agree to an expression of opinion which would lead to a reversal of the policy of his predecessors for a great many years past. If he could be convinced upon the evidence, considered in the light of such advice as he could obtain from the experts at the Home Office, he did not know that he should hesitate to support a bill having for its object the carrying out of the hon. baronet's policy. To accept or reject the motion would be to prejudge the report of the Royal Commission. He hoped the hon. baronet would not press his motion, but, if he did, he could neither vote for nor against it. Whatever decision the House came to, it should be understood that the motion only dealt with the limited question whether dogs should or should not be excluded from vivisection. Mr. Guinness said the evidence was overwhelmingly in favour of dogs being allowed to be the subjects of vivisection subject to the present restrictions. Whilst the hon. member was speaking attention was called to the fact that forty members were not present, and, as a quorum was not made within the required time, the House stood adjourned at 20 minutes past 9 o'clock.

University of London.—Sir Philip Magnus asked whether the Government had made itself responsible for the housing of the University of London throughout its history; whether in the Treasury Minute, dated February 16th, 1899, the liability to provide a dignified and suitable home for the university, and also to make such provision as might thereafter be needed for the full extension and development of the university under the Statutes and Regulations made by the Commissioners appointed by the Act of 1898, was acknowledged; and what steps His Majesty's Government proposed to take in the matter, in view of the present unsatisfactory accommodation for the university as disclosed in the Report of the Royal Commission on University Education in London issued on December 15th, 1911. The Prime Minister said that the Government had, as a matter of fact, provided accommodation for the London University throughout its history. The Treasury Minute cited was written before the removal of the old university to South Kensington, and referred to the possibility of an arrangement, which was actually carried out, between the authorities of the Imperial Institute and the Treasury. It must not be construed as admitting liability on the part of His Majesty's Government to provide for all possible requirements of the university in the future. The recent report of the Royal Commission pointed out that the university must depend to a large extent upon private endowments for its full development. The Government did not think that it would be opportune to take any step in connexion with the present accommodation for the university before the final report of the Royal Commission had been issued.

The Prime Minister, in answer to a further question, said that he believed that a large number of public bodies ready to contribute towards the establishment of a building for the university were only waiting to see what action the Government would take.

Sick Absences in Postal Service.—In reply to Mr. Dawes the Postmaster-General said that his attention had been directed to the number of sick absences, due mainly to nervous complaints, among the female counter clerks and telegraphists during the year 1911. He was glad to say that, apart from a small proportion of the staff who required prolonged sick leave, the general health during 1911 of the female counter clerks and telegraphists employed in the East Central District was satisfactory in spite of the excessive heat experienced last summer. The amount of sick leave due to nervous ailments represented rather less than 14 per cent. of the total sick absence. The figures 52 and 50 quoted by the honorary member included, out of a staff of 195, some other officers than counter clerks and telegraphists, and were overstated by about 20 per cent. Five officers were added to the reserve staff during 1911, and the question of creating a further additional appointment was under consideration. He did not think a further inquiry was necessary.

Osborne College.—In reply to Mr. Hunt, Mr. George Lambert said that there were thirty-two cases of boys under medical treatment at Osborne College on March 3rd, 1912. Of these, one was a case of enteric fever, now convalescing; three cases of pneumonia; one of chicken-pox. There were twenty-seven minor diseases and injuries. There were no cases of diphtheria or bronchitis.

Outdoor Medical Relief Treatment.—Lord Henry Cavendish-Bentinck asked the President of the Local Government Board whether, in cases where treatment of children was prescribed by school medical officers and the parent was unable, by reason of circumstances, to pay the cost of such treatment, the board of guardians was bound to provide such treatment for the child if it was not undertaken by the education authority; and whether he would, by circular or otherwise, call the attention of boards of guardians to their duties in this respect; and whether the cost, if defrayed, would be medical relief which did not disfranchise the parent. Mr. Burns replied that it was the duty of boards of guardians to relieve destitution, and, as pointed out in the circular to guardians on the administration of outdoor relief, a person may properly be regarded as destitute who was unable to provide for himself the particular form of medical attendance or treatment of which he was in urgent need. The principle would appear to him to apply to the case of children who needed medical treatment which the parent was unable to provide. He realized that the relative position of the boards of guardians and the local education authorities in this matter was one of some difficulty, and he had already had the matter under consideration. He might add that medical relief of the kind referred to afforded by boards of guardians would not involve disfranchisement of the parent. In answer to Sir A. Markham, who asked what steps were being taken in view of the breakdown of the Poor Law, Mr. Burns said that he had satisfied himself that the authorities concerned were taking proper and necessary steps to meet the improbable contingency referred to. He denied that there had been any breakdown or hungry children. He was keeping his head. Some of the newspapers were not.

Education (Administrative Provisions) Bill.—A bill to amend the provisions of the Education (Provision of Meals) Act, 1906, was presented on February 19th by Mr. Wardle; it is supported by Mr. Ramsay Macdonald, Mr. Barnes, Mr. Clynes, Mr. Charles Duncan, Mr. Keir Hardie, Mr. Arthur Henderson, Mr. Jowett, Mr. Crooks, Mr. Tyson Wilson, Mr. George Roberts, and Mr. Parker.

Factory and Workshop Act.—Mr. Ramsay Macdonald asked for the number of fatal accidents in places under the Factory and Workshop Act during each of the years 1909, 1910, and 1911, and the number of non-fatal accidents for the same period. Mr. McKenna: The number of accidents reported to the Factory Department in each of the three years was as follows:

	Fatal.	Non-Fatal.
1909	946	116,554
1910	1,080	128,470
1911	1,182	148,735

The number of factories and workshops on the register which were unvisited in each of the three years respectively was as follows:

	Factories.	Workshops, Including Men's Workshops.
1909	22,862	44,267
1910	21,243	32,729
1911	22,094	35,856

He should add that heavy demands were made on the staff in each of the three years, and especially in 1911, in connexion with inquiries by Departmental Committees and other special inquiries, which considerably diminished the time available for inspection. The number of factories and workshops on the register in 1911 showed an increase of about 4,000 on the figure for 1909.

Animal Diseases.—In answer to questions put by Captain Murray, Mr. Stainer, and others, the President of the Board of Agriculture said that he did not think that the occasion had arisen for the appointment of a Departmental Committee on Anthrax. Careful and continuous investigations were being carried on by the Veterinary Staff of the Board, and he thought that for the present they might be content to await the issue of their investigations and the results of the operation of the Anthrax Order of 1910, which had been in force for little more than twelve months. With regard to carrying hides separately that come from a country where foot and mouth disease exists, a Departmental Committee was at present considering whether any further measures could be adopted to prevent the recurrence of outbreaks of foot and mouth disease. He thought it would be desirable to postpone any legislation that might be necessary in this connexion until the Committee had reported. With regard to experiments on animals affected with tumours no such experiments were at present contemplated by the Board. He understood, however, that experiments with malignant tumours in animals were carried out by means of the Cancer Research Fund. The Board had not issued any information on this subject.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

LONDON.

London School of Tropical Medicine.

A meeting in support of the London School of Tropical Medicine was held at the Mansion House on February 28th. The Lord Mayor occupied the chair, and among those present were Lord Sheffield, Sir George H. Reid (High Commissioner of the Australian Commonwealth), Admiral Sir John Durnford, Sir Patrick Manson, Sir Dyce Duckworth, Sir William Church, Professor T. Anderson Stuart, and Dr. F. M. Sandwith.

Mr. Lewis Harcourt, Secretary of State for the Colonies, said that no one was better equipped than he was, by personal and official knowledge, to assure those present how worthy of support was the London School of Tropical Medicine. It was his painful duty to receive day by day telegrams from all our tropical possessions telling of sickness, danger, and death amongst the gallant band of men who throughout the empire were laying the sure foundations of the *Pax Britannica* by their admirable administration of law, equity, justice, religion, medicine, civil rights, and good fellowship. They were exposed not only to the familiar diseases of temperate climes, but to the pestilences of torrid zones, known too well by their results, but known too little in the domain of prophylaxis and of cure. Malaria, blackwater fever, yellow fever, plague, cholera, leprosy, sleeping sickness, were all at hand, and hungry to claim their toll. The most and the best that could be done for the victims was to give them specialized treatment when they could be got home, or to provide opportunities for specialized research, which might hasten the discovery or perfection of curative methods. The London school was founded thirteen years ago, under the auspices of one of his most distinguished predecessors, Mr. Chamberlain, and it was no exaggeration to say that there was no subject of his administration in which he was more devotedly interested than that of tropical medicine. A few days ago he wrote to Mr. Chamberlain, telling him of this meeting, and he had received the following reply: "I am glad to hear you are supporting the London School of Tropical Medicine. Much has been done in recent years in this respect, and much more remains to be done. In no direction has the advance of science been more noticeable than in the endeavours to make our tropical countries more healthy. I do not think that anything given to this object will be thrown away, and all who take an interest in our Colonies must see that these diseases, which are special to tropical climates, are the great obstacle at present to their development. I hope that your appeal will meet with a generous response, for the success of our tropical Colonies depends largely upon the research which is being carried on, and which has every prospect of great results in the future, if adequate means are forthcoming." It was right to say, Mr. Harcourt continued, that the inception of the scheme was due to the genius and foresight of Sir Patrick Manson. But its success had also been greatly due to the indefatigable labours of the Chairman of the Board of the Seamen's Hospital Society, Mr. Perceval A. Nairne. Mr. Harcourt proceeded to give some account of the work of the school. During the twelve years of its existence it had trained, he said, 1,300 students. Nearly 500 of these had passed into the service of the Dominions and Crown Colonies, and many men in the Colonial Service suffering from tropical diseases had profited by admission to the wards of the hospital. He believed that something like forty Colonial officials had been under treatment during the last two years. He was happy to be permitted to state that the Treasury were prepared to contribute a donation of £500 to the purposes for which they were appealing that day. The Treasury in recent years had been giving £8,000 a year, in addition to various capital donations, in aid of the different branches of the work. Nor had he made any mention of the very large sum—approximately £50,000—which had been spent during the last five years in the investigation and suppression of sleeping sickness in Uganda. As Uganda received large annual subventions from the Treasury, that expenditure had fallen in large measure on Imperial funds.

Sir Patrick Manson read a report on the progress of the school, and, on the motion of Lord Sheffield, seconded by Mr. Arthur Lampard, the following resolution was submitted and carried unanimously:

> That the work of the London School of Tropical Medicine is worthy of support, and urgently needs extension and endowment.

It was announced that the contributions, including the grant from the Treasury, amounted to £2,293, and to this sum must be added £250 given by a gentleman present after the close of the proceedings.

London County Council Education Committee.

Open-air Schools.

The Education Committee of the London County Council reported on March 12th that it had had under consideration the policy to be pursued with regard to open-air schools, and had decided that, having now passed the experimental stage, they should be placed on a permanent basis. The first open-air school was held at Bostall Woods in 1907, and in view of the great improvement in the health of the children who attended it was decided to extend the experiment to three schools for 1908. In 1911 the schools were continued a greater number of weeks than in previous years—in one case the school was held during the whole year.

The favourable medical reports upon the open-air schools held during the year 1908 had been confirmed in successive years. It was evident that children suffering from debility, anaemia, etc., and consequently unable to benefit from the instruction in ordinary schools, could be restored to take their places in their classes. The physical and intellectual improvement shown was very remarkable, and the committee had come to the conclusion that these results were due in a large measure to the course of instruction given under open-air conditions.

In regard to the extension of open-air schools, playground classes would have a material effect in reducing the number of children who required the régime of the open-air school. The medical officer, however, stated that there was a large number of children in London elementary schools suffering from some specific condition requiring such treatment, and presumably there would always remain an appreciable number of these. At the same time, the committee pointed out that there were two great difficulties in the way of any considerable extension of the system of open-air schools: one was the extreme difficulty of obtaining sites, and the second the cost, which was very high as compared with that of ordinary schools. The average cost per head of average attendance for nine months at open-air schools was £14 7s., and at ordinary schools £1 9s. Having regard to these circumstances, while the principle of holding a limited number of open-air schools should be approved, any extension of the system should be very gradual. When the playground classes were in fuller operation, and more use was made of existing opportunities of open-air work, it would be possible to gauge the amount of special provision still necessary.

Duties and Remuneration of Medical Officers of Special Schools.

On March 13th the Education Committee had under consideration the duties and remuneration of the local medical officers appointed to the residential special and industrial schools and places of detention in the county of London. The Special Schools Subcommittee stated that at present the duties required of the medical officers varied considerably at the different institutions, and a larger degree of uniformity was desirable. The following list of duties had therefore been drawn up:

1. To attend the school at least once every week on a fixed day and hour and at such other times as may be necessary, and to enter the visits in a book kept for the purpose.
2. To examine the children on admission and make the necessary entry on the medical card.
3. To attend any cases of illness amongst the children and residential staffs, to make notes on cards kept for the purpose, particulars regarding all serious cases of illness, and the treatment prescribed.
4. To vaccinate any child when it may be found necessary.
5. To furnish monthly medical reports to the school medical officer.

6. To furnish any other reports or certificates that may be required to the school medical officer.
7. To give immediate notice to the coroner of cases of sudden or violent death or cases where the local medical officer does not feel justified in giving a death certificate of any inmates, and to report the circumstances to the school medical officer.

Consequent upon the revision of the duties of the medical officers, and also upon the fact that in the past there had been no common basis for fixing their remuneration, the subcommittee had drawn up a scale applicable to residential schools and also one suitable for places of detention, where the conditions differed to some extent.

The subcommittee recommended that in future a payment of £30 per annum be made to local medical officers attached to each of the residential special and industrial schools, to cover the performance of all duties required up to a total number of persons of 30 (including children and staff), and that for each person beyond 30 an extra payment be made at a rate of 8s. a head per annum. If the proposed scale were brought into operation at once the additional cost would only be £3 13s. per annum. Nevertheless, the subcommittee was of opinion that in cases where the present amounts paid to doctors were lower than the revised scale, those amounts should be raised to the scale as from April 1st, 1912, on account of the additional duties imposed, but that those salaries which were higher than the proposed scale should remain unaltered so long as the positions were held by the present medical practitioners. The revised scale should apply to future appointments.

The conditions at places of detention were not quite comparable on account of the large number of children passing through them, and the comparatively short period of their stay there. The subcommittee, however, was of opinion that the basis of payment, as far as possible, should be the same—namely, £30 a year for the first thirty children and staff, with an additional 8s. a head per annum for each additional unit up to the extent of the recognized accommodation. It would be necessary to make payments in respect of medical certificates required, and the subcommittee proposed that in respect of these additional services payments at the rate of £40 a year should be made for each 1,000 children passing through the institutions. Although an exact comparison could not be given, it might be assumed that the expenditure would not be more under the proposed arrangements.

In some cases the salaries at present paid to the medical officers included the supply of all necessary drugs, but in the majority of cases the cost of drugs was borne by the Council. This want of uniformity could not be considered satisfactory, and the subcommittee advised that in future the Council should defray the cost of all drugs. In the case of the more expensive drugs and those which were likely to deteriorate in quality, it was desirable that the doctor's prescription should be made up by local chemists, but there was no reason why the cheaper and more common drugs should not be kept in suitable places on the school premises. A dispensing cupboard should, therefore, be provided at each institution.

The Education Committee approved resolutions embodying these proposals.

Dental Treatment in Marylebone and Fulham.

The Children's Care Subcommittee reported that it had received an offer from the Board of Directors of the St. Marylebone General Dispensary to undertake the dental treatment of children. The dispensary was centrally situated for a number of schools, and the subcommittee recommended that arrangements be made for the dental treatment at this dispensary of children of 6, 7, and 8 years of age on three half-days a week, to be increased to four if necessary. An offer from a local committee at Fulham to provide dental treatment had also been received, and the subcommittee proposed that it be accepted, treatment to be provided on four half-days a week for children of 6, 7, and 8 years of age, and for an average of eight to ten cases a half-day to be sent to the centre by the Council. Assuming that an average of eight new cases a day was maintained, treatment would be secured for 1,400 children annually at each centre, and the maximum cost of each centre would be as follows:

	£
Salary of dentist (four half-days a week) ...	200
Salary of anaesthetist (one half-day a fortnight)	25
Capitation payment on 1,400 cases	140
Nurse on four half-days a week	40
Salary of inspecting dentist (one half-day a fortnight)	25
	430

An organizer to make appointments for the children and follow up the cases would also be necessary, and would cost £100 a year for the two centres. With the provision of apparatus, which would remain the property of the Council, the cost of the two schemes would be £1,000.

The Committe decided to accept both proposals.

Proposed Medical Treatment Centre in Poplar.

In consequence of the announcement that the London Education Committee has accepted the offer of a voluntary committee not wholly composed of medical practitioners to establish an additional medical treatment centre in Poplar, the Poplar Medical Union has issued a circular letter to its members recommending them not to accept service under this committee, but to refer the matter to the committee of the Union which is making investigations. We are informed that the members of the Poplar Medical Union adhered last year to the principles of the scheme drawn up by the Joint Committee of the Metropolitan Divisions of the British Medical Association. The chief point of divergence between this scheme and that now favoured by the London County Council was, we are informed, the question of the provision of suitable premises, which, it was contended, should be provided by the London County Council.

LIVERPOOL.

SCHOOL OF TROPICAL MEDICINE.

SIR WILLIAM LEVER, the Chairman of the Liverpool School of Tropical Medicine, and Lady Lever were entertained at dinner on February 29th by the staff of the school on their return from their recent visit to South Africa. The Lord Mayor of Liverpool (the Earl of Derby, G.C.V.O.), who is a Vice-President of the school, presided, and among those invited to meet the guests of the evening were Sir Ronald Ross, Sir Edward Russell, Professor R. Newstead, Dr. J. W. W. Stephens, Professor J. L. Todd, Professor E. W. Hope, Professor R. Caton, and Drs. J. O. Wakelin Barratt and T. R. Bradshaw. In proposing the toast of the evening, "Sir William and Lady Lever," the Lord Mayor said he occupied in Liverpool the two high places of Lord Mayor and Chancellor of the University, and in that dual capacity he welcomed Sir William and Lady Lever. He would say one word as Chancellor of the University. When the late Sir Alfred Jones left them he did not think a happier choice could possibly have been made than in selecting Sir William Lever to succeed him. Sir Ronald Ross, in supporting, said Sir William Lever took up the chairmanship of the school two years ago, when it was prosperous, and had increased that prosperity; now they were one of the leading schools of the country. Sir William Lever, in responding, reminded them that any reflected light came from his predecessor, Sir Alfred Jones, who was the founder of the school. He desired to thank Sir Ronald Ross, Professor Newstead, and others in the school for the assistance they had given him and also the vice-chairman (Mr. T. C. Danson), who knew the work of the school, and had helped him generously and whole-heartedly. The one desire of every one who worked in the school was to forward the work of science in tropical countries, and make those countries more habitable for the white man. He had never been connected with an institution which had a higher tone amongst its workers, and he did not think it was out of place to mention Sir Rubert Boyce, whom they missed very much. Each succeeding year the school must become a training ground for young doctors to go out to distant parts of the world to carry knowledge of sanitation as the best means of healthy living, and it was that phase of the work of the Liverpool School they were entering upon at present. In conclusion, Sir William announced that a telegram had been received from the King of the Belgians, giving a subscription of £500 towards the work of the Liverpool School of Tropical Medicine.

MR. F. T. PAUL.

Arrangements have been made to present to Mr. F. T. Paul the portrait of himself, which has been subscribed for by his friends and colleagues, on his retirement from the active staff of the Liverpool Royal Infirmary, and painted by Mr. Hall Neale. The presentation will take place at a dinner to be held at the Exchange Hotel, Liverpool, on Wednesday, March 27th. Those desirous of attending are requested to communicate with one of the honorary secretaries, Mr. T. C. Litler-Jones, 1, Abercromby Square, and Dr. Hubert Armstrong, 7, Rodney Street.

MANCHESTER AND DISTRICT.

The Manchester Corporation and the Insurance Act.

A report has been issued by the Town Clerk of Manchester showing the effect that the National Insurance Act will have on the employees of the Corporation. At the end of last September there were 8,584 members of the Thrift Fund, to which payments are compulsory, and of these, 6,350 would come under the provisions of the National Insurance Act. The Act does not repeal or affect the local Act of Parliament under which the Thrift Fund was established and is now regulated, and that fund will have to be continued, as it can only be modified by an amending Act of Parliament. The question is now under consideration whether it will be expedient for the Corporation itself, or for the employees of the Corporation who come within the Insurance Act, to make application to be formed into an approved society, either alone or in combination with other bodies. The alternatives to this would be for each employee to join any approved society independently or to become a deposit contributor.

The Manchester Warehousemen and Clerks' Provident Association.

Seeing that close upon 100 medical men of Manchester and district are now acting as medical officers to the Warehousemen and Clerks' Association at a capitation fee for medical attendance and medicine of 4s. a year, the action of the association with regard to the Insurance Act will be of some importance. It appears from the annual report of the directors, which has not yet come before the annual meeting, that the board recommends that the association should seek to become an approved society under the Act, and that subscriptions of present members who come under the Act should be reduced by 6d. a month. The directors state that on account of the fact that over 90 per cent. of the members receive salary during a part or the whole of sickness, the proportion of the 2s. a month contribution going to cover sickness claims is approximately only 1d. a month, and to relieve the members of paying this 1d. a month the present sick payments will have to be cancelled altogether, and members would simply receive the sick benefits granted under the State scheme. The only practical relief that can be given will come by transferring members who come under the provisions of the Insurance Act to the State's medical provisions, and this will relieve the voluntary contributions of 6d. a month. Consequently, the directors submit a scheme whereby present members coming under the Act will be able to continue their voluntary membership at a reduction of 6d. a month in the subscription rate, and receive all the present benefits of the association, with the exception of the ordinary and special medical attention now granted, and with the further provisions that no sick benefit shall be granted for the first six working days a member is away sick. It is recommended that this benefit shall commence as from the seventh working day after that on which the applicant was last able to follow his occupation, and shall then be payable for a period of not less than the three following working days. Members coming under the Insurance Act and preferring to continue the present rate of subscription can receive all the present benefits, including the ordinary and special medical benefits. The following statement is of special importance to the present medical officers:

> With regard to members who do not come under the provisions of the State scheme, it is just possible that, on account of the decrease in private family practice in which the medical practitioners may be involved, they may not be willing to contract for medical attention except on considerably higher terms, and it is therefore proposed to do away with contract service at the end of this year, and to substitute another scheme.

It is further stated that two-thirds of the present total membership will probably be compelled to come under the State scheme, and in order that these persons may receive the maximum amount of benefit from the State the directors recommend that the association should become a fully approved society under the Act.

It may be noted that a considerable number of the members of the Warehousemen and Clerks' Association are men in a good position financially, and, though it is quite true that the sickness rate is generally low, the capitation fee of 4s. is quite inadequate. Nevertheless, the medical officers have not hitherto united to demand a higher capitation fee, though several attempts have been made by the local Divisions of the British Medical Association to urge on them the importance of a united stand on the matter.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Deputy Commissionership in Lunacy.

Dr. Robert Cunyngham Brown, at present medical officer of His Majesty's Prison, Birmingham, has been appointed by the Secretary for Scotland to fill the vacancy in the office of Deputy Commissioner in Lunacy for Scotland caused by the death of Dr. J. F. Sutherland. Dr. Cunyngham Brown was until recently deputy medical officer in His Majesty's Prison and State Criminal Lunatic Asylum, Parkhurst, and before his entry into the prison service was pathologist to the County Asylum, Chester, and resident clinical assistant to the National Hospital for the Paralysed and Epileptic, Queen Square. He acted as special commissioner of the British Medical Journal to report upon the family care of the insane in Scotland, Belgium, France, Germany, and Holland. He also reported to this Journal upon the conditions obtaining among the outdoor pauper lunatics in various districts in England and Wales. His reports were published in the British Medical Journal of 1905, and the wide acquaintance with the subject which he then showed led to his being called to give evidence before the Royal Commission on the Care and Control of the Feeble-minded. Dr. Cunyngham Brown, like a good many other men who have won distinction, is a son of the manse, his father, Dr. Robert Brown of Paisley, having been a minister of the United Presbyterian and English Presbyterian Churches. On his mother's side he is of Shetland descent from the family of Hoseason, otherwise Osieson, of Aywick.

Dunfermline Medical Men and Friendly Societies.

A meeting of representatives of friendly societies in Dunfermline was held on March 8th, to consider their position in connexion with the medical men. The doctors in Dunfermline intimated an increase in their terms for medical attendance of exactly double what they originally charged. The friendly societies threatened to invite other doctors to the town to carry on the work. At the meeting it was reported that a deputation had waited upon Dr. C. F. Knight, Edinburgh, who informed the deputation that he could easily obtain medical men to take up the duties. It was intimated that one of the doctors whom he could send to Dunfermline would be a surgeon, and also that a doctor in practice in Glasgow had already offered his services. The representatives present unanimously agreed to recommend to their respective societies that two doctors be brought to the city. The new doctors will be ready to commence duty in Dunfermline at the end of this month, when the contract with the Dunfermline doctors expires. Dunfermline is the first town in which the doctors have refused to work under the old terms. They are to be highly commended for the step they have taken.

The Morison Lectures.

The Morison Lectures before the Royal College of Physicians of Edinburgh were given on February 26th and 28th, and on March 1st, the subject being Certain Aspects of Ataxia, by Dr. J. J. Graham Brown. After some introductory remarks, he gave a description of the general arrangements in the peripheral and in the central nervous system, which form the apparatus for co-ordination of muscular movements, and the disturbance of which causes ataxia. He then described the various functions of the spinal cord in relation to co-ordination, devoting special attention to reciprocal innervation, synergia, tonus, and in particular the reversal effect of Uexküll, which he considered to be of essential importance in connexion with co-ordination and its disorders. The pathology of tabes, in so far as it concerned the ataxic symptoms of that disease, was then briefly described. In so far as muscular sense is

concerned, the lecturer held that its important components were the impressions conveyed by the afferent fibres from the muscle spindles and from the tendon organs of Golgi. These structures were described in some detail, and it was suggested that the adequate stimulus in connexion with the muscle spindles was probably the action current in their fusal fibres. The lecturer then alluded to the atrio-ventricular bundle of His, pointing out similarities in its structure to that of the muscle spindle. He strongly urged his belief that the atrio-ventricular bundle was in reality a mass of specialized spindles, the function of which was to act as receptors of a local reflex system for the rhythmic control of the cardiac contraction.

The second lecture was devoted to a study of the clinical aspects of muscular sense, of its performances, and of the results of its loss—ataxia and atonia. The various bedside methods used for testing muscular sense were submitted to analysis, and their advantages and disadvantages stated. After some remarks on the influence of practice and attention on conditions causing ataxic movement, the lecturer described the paths by which muscular sense impressions were conducted up the spinal cord and towards the higher centres.

The third lecture was devoted to an examination of the afferent stimuli, other than those of muscular sense, which are used in co-ordination and equilibration—the vestibular neurones, etc., and to the paths by which all these impressions pass to the cerebellum. A description was then given of the neurotic arrangements in the cerebellar cortex and its nuclei. Finally, the co-ordinating functions of the cerebellum were considered, and the clinical results of lesion of that structure detailed.

ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

The annual general meeting of the Odonto-Chirurgical Society of Scotland was held in Edinburgh on March 8th, when, on the recommendation of the council, office-bearers were elected for session 1912–1913. Later, Mr. Hodsdon read a paper on the early recognition of surgical affections in the mouth, and Mr. G. W. Watson, L.D.S., gave a communication, entitled Notes of a Maxillary Tumour Associated with Impaction of the Right Canine. The membership of this important society now stands at 93.

The annual dinner was held in the Caledonian Station Hotel in the evening, with Mr. J. Douglas Logan, the President, in the chair. There was a good attendance of members, and among the guests were the President of the Royal College of Surgeons of Edinburgh (Dr. George A. Berry), Mr. Hodsdon, the Dean of the Edinburgh Dental Hospital (Dr. Guy), the President of the Glasgow Odonto-Chirurgical Society, the President-elect of the British Dental Association, the Edinburgh representative of the BRITISH MEDICAL JOURNAL, and others. After an excellent dinner, the usual loyal toasts were given from the chair, and that of "The Imperial Forces," proposed by Mr. A. Naismith, L.D.S., was responded to by Major Marshall, I.M.S. Mr. Hodsdon, who proposed the toast of "The Odonto-Chirurgical Society," spoke of the vast number of unqualified dentists, variously estimated at from 20,000 to 25,000, whilst somewhere about 5,000 were on the *Register*. The dentists wanted protection. What the Odonto-Chirurgical Society was doing, among other things, was to let the public know that there were people who studied dentistry scientifically, and could treat it in a totally different way from other people. He warned the dentists to have nothing to do with contract practice. It had been bad for the medical profession, and it would be probably worse for them. The effect of present legislation would tend to lower the status of the medical profession. The President, in reply, remarked that inquiry into the food of the working-classes revealed some startling and deplorable facts, showing that the diet of the masses had undergone a great change of recent years, and that they were indulging in a non-nutritious, unwholesome, and pernicious system of feeding. The enormous quantities of tinned meat, tinned fish, and tinned fruit imported, besides the large quantity manufactured in this country, were referred to, as well as the unsatisfactory and deleterious effects of such feeding on the teeth, and the danger of the continued absorption of small quantities of tin. Dr. G. J. Goldie gave the toast of "The Edinburgh Dental Hospital and School," and Dr. Guy, in replying, referred to the debt the dental profession owed to the researches of Pasteur and Lister. The toast of "The Royal College of Surgeons" was given by Mr. C. Rees Price, L.D.S., and the President (Mr. Berry) replied. The toast of "The Guests" was given by Mr. T. W. Davie, L.D.S., and Dr. Boddie replied. Dr. W. T. Finlayson gave "The Health of the Chairman." Some very good music added to the pleasure of the evening.

LEITH MEDICAL PRACTITIONERS.

The medical men residing and practising in Leith have formed themselves into an association "to promote and safeguard the interests of the medical profession." This implies no antagonistic spirit towards existing organizations, but is rather for their support, the purpose being to provide locally the means of attaining a common course of action in various medical matters. Every doctor practising in the burgh has joined the association.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

DR. J. WALTON BROWNE.

THE Board of Management of the Royal Victoria Hospital, Belfast, has received with great regret the resignation, under the age regulation, of Dr. J. Walton Browne, Senior Surgeon to the institution and Chairman of its medical and surgical staff. Dr. Browne has now completed thirty-seven years' service as surgeon; he had previously been house-surgeon. Since the death of the late Professor Cuming, he has been re-elected annually by the Visiting Medical Staff as their chairman. Dr. Browne's reputation and name are household words throughout Ulster; he has endeared himself to generations of students, and his skill as a prompt and experienced surgeon is well known. From his long connexion with the medical school, his retentive memory, and his keen observation, he has been an encyclopaedia for his juniors to consult as regards the older men, former students, past crises in local medical history, and in general surgical knowledge; occasionally some innovator has been told that his discovery has been already discovered, and would be found in some books on surgery now out of date, or in the BRITISH MEDICAL JOURNAL about the year of Queen Victoria's first Jubilee. Although Dr. Browne retires from the full active work at the hospital, it is gratifying to his many friends that he is still in full mental and bodily activity, and that the benefit of his ripe experience will be at the service of the hospital as consulting surgeon. In the wards of the hospital his cheery voice, his light but concise clinical teaching, his ever-present aid to the young surgeon, his valuable and estimable professional work will all be missed, and their absence will leave a void with colleague and student. It is the sincere wish of all that "Jack Browne" may long enjoy the rest and honour that he so well has earned, and that many years of useful activity lie before him.

NATIONAL INSURANCE.

At a general meeting held in the Ancient Concert Rooms, Dublin, last week, in furtherance of the objects of the Irish Health Insurance Society, Lady Aberdeen said that the society founded its claims for support on the fact that it was being formed by persons who had given a great deal of thought and time and labour to health work in Ireland for several years, and who were very deeply concerned in making any legislation passed for the object of promoting public health successful. She drew special attention to the sanatorium benefit of the Act, which would begin as soon as the Act came into operation, and which, she said, would enable the local Insurance Committees, which were to be formed for every county and borough, to give free sanatorium treatment to all insured persons and their families, whom they thought would benefit thereby.

OPENING OF NEW WARDS IN THE ROTUNDA HOSPITAL.

On March 6th, on the invitation of Dr. Jellett, Master of the Rotunda, the Governors of the Rotunda Hospital, and a number of medical men inspected the new wards which have been opened recently. A little more than a year ago the Master drew the attention of the governors to the overcrowding of the existing labour wards. The number of

patients has increased from 1,599 in 1890 to 2,596 in 1911. The nursing staff had likewise increased, and the wards were too small for the amount of work performed in them. The board appointed a special committee, which was satisfied after careful consideration that a change in the labour wards was urgently necessary, and came to the conclusion that the future status of the hospital was intimately involved with its labour ward system. It strongly recommended that, in accordance with the Master's suggestions, one of the two larger wards in the top story of the Thomas Plunket Cairnes Wing (which, prior to the erection of the annexe for nurses, had been used as a nurses' dormitory), with the three small rooms beside it, should be formed into a distinct unit for the reception of maternity patients, separate from the lying-in wards. The work was sanctioned and put in hand at once, but, owing to strikes last year, the completion of the wards was delayed for several months.

The suite of wards includes waiting and labour wards, an isolation labour ward, with clerical room, dressing room, and kitchen. The floors are white mosaic and the walls pale green mosaic for a height of 8 ft.; above that the walls and ceilings are enamelled white. There is a hot water heating system, and hot and cold sterilized water is laid on. The wards have been fitted with electric light, and the entire equipment is of the most approved description, as the governors consider it essential that the design should be carried out in such a manner that the improvements will rank with the best of their kind in Europe.

HEALTH EXHIBITION.

Last week a Health Exhibition, held in connexion with the Women's National Health Association, was opened at Blackrock, near Dublin, by Lady Aberdeen, who, in her opening address, said that the original Tuberculosis Exhibition, which had travelled over all parts of Ireland, had now grown till she thought she was justified in calling it a Health Exhibition. It still, however, had a large and interesting section on tuberculosis. Although the death-rate from this disease was highest in Ireland, still it was decreasing at a greater rate there than in any other country in the world, and that fact should urge people on to adopt the simple principles of health, by which so much had already been done, especially in the bringing up of children, the association believed that its success had been the result of its appeal to the women of Ireland. Referring to the Town Planning Section of the exhibition, Lady Aberdeen said it was with pleasure that she had seen some of the new houses which had been built recently by the Urban Council, and also the plans which had been made for the recreation ground for children.

Professor McWeeney gave a lecture on "Tuberculosis," in the course of which he said that in Ireland 10,000 people died yearly from one form or another of this infectious disease, and that many of the cases were preventable; most of the deaths occurred between the ages of 15 and 35—in other words, during the prime of life. He also spoke of emigration and insanity as the other two most important factors in the loss of population, and mentioned the part played by tuberculosis in the production of insanity. In dealing with the methods of prevention and cure, he said that improved housing of the working classes, the general establishment of tuberculosis dispensaries, the medical inspection of schools, and the provision of well-ventilated and properly warmed schoolrooms were amongst the most important preventive measures. Hospital accommodation for advanced and infective cases was another crying need. In view of the danger to young children of drinking tuberculous milk, local authorities ought to make full use of their powers under the Tuberculosis Prevention Act of 1908 to discover and trace to its source all tuberculous milk coming into their districts.

In a lecture on "Domestic Animals in Relation to Public Health," Professor Mason, M.R.C.V.S., dealt with tuberculosis, actinomycosis, glanders, anthrax, tetanus, diphtheria, measles, scarlatina, and ringworm. The Rev. C. O'M. Lawless, C.C., lectured on the subject of the "Elimination of Slums." The Chairman, in proposing a vote of thanks, said that the urban council had erected 205 houses for the working classes, which exceeded the number erected in any other town of its size in England or Ireland.

British Guiana.

PUBLIC HEALTH REPORT.

THE report of the Surgeon-General of the Colony of British Guiana for the year ending March, 1911, has been lately issued.

Medical Staff.

The Government Medical Staff numbered forty, besides one medical magistrate, three private practitioners in charge of Government dispensaries, and a private practitioner who acts as Police Surgeon.

Public Medical Institutions.

Public Hospital, Georgetown.—This institution has accommodation for 291 males and 245 females. The total number of admissions during the year was 11,059, and 41,908 out-patients. There was a death-rate of 11.7 per cent. of the total number treated. The death-rate amongst children under five years of age is 18.9 per cent. This high mortality the Resident Medical Officer attributes to a large extent to malnutrition consequent on improper feeding. The death-rate from pneumonia continues high; out of 456 cases treated, 203, or 44.5 per cent., died; out of this number 51 died within 24 hours of admission.

In the public hospitals at New Amsterdam, Duddie, Bartica, and the North-Western District, over 5,000 patients were treated.

Lunatic Asylum.—There were 460 males and 275 females in the asylum on April 1st, 1910, 72 males and 78 females being admitted during the year. The mortality-rate was low (6.8 per cent.) on the number of cases treated.

Public Dispensaries.—At these institutions 26,372 patients were treated.

Public Leper Asylum.—There were 299 males and 123 females treated in the asylum during the year, with a death-rate of 15 per cent. for males and 19.3 per cent. for females on the number of cases treated. There were 4 cases discharged as cured, the result of the nastin treatment. The nastin treatment was continued during the year. Judging from the bacteriological reports, the clinical and physical appearances, a large number of the inmates have benefited greatly by the treatment.

Vaccination.

In all, 2,289 persons were vaccinated, of which 1,935 were either successful or insusceptible.

Health of the Colony.

It is stated that the colony was free from any dangerous infectious or contagious diseases during the year.

Death- and Birth-Rates.

The death-rate for the whole colony was 34.4 per 1,000, and the birth-rate 27.5. The mortality amongst children under one year is far in excess of what it should be; in the year under review it was 235 per 1,000. The mean for the past five years was 210 per 1,000.

Tuberculosis.

Tuberculosis was the cause of 6.8 per cent. of the total mortality of the colony, and in Georgetown 8.8 per cent. A lady visitor has been specially appointed in Georgetown by the Society for the Prevention and Treatment of Tuberculosis, who visits the cases under treatment, gives advice as to the means to be taken to prevent the spread of infection, and endeavours to persuade those afflicted to take advantage of the tuberculosis ward at the Public Hospital, Georgetown.

Ankylostomiasis.

On the sugar estates steady progress was continued in the measures which have now for some time been advocated for the treatment and prevention of this disease, (1) by the erection of latrines, (2) the systematic examination of all the newly-arrived immigrants and of persons suffering from anæmia or showing the least sign of being infected with the ankylostome parasite, (3) the treatment and constant observation of all known infected cases. The introduction every year of a large number of ankylostome-infected cases amongst the East Indian immigrants, between 70 and 80 per cent., is a very serious factor in preventing not only much better results, but also the

eradication of the disease. There were 413 cases treated in the public hospitals, with 50 deaths.

Bacteriological Department.

The bacteriological department in British Guiana is fully equipped and is doing much useful work. The total number of examinations made during the year was 4,481.

Special investigations were made in connexion with:

(*a*) *Benzoyl Chloride in Leprosy.*—After March, 1910, various modifications of Professor Deycke's treatment by nastin injections, alterations in dosage, frequency of injection, and site of injection were tried, but the results were in most cases very indefinite and inconclusive. Since October, 1910, 70 patients have been treated by injection of benzoyl chloride, which acts as a solvent on the fatty capsule of the bacillus, and thus leaves it open to phagocytic destruction. The first injections were of benzoyl chloride in olive oil, but this latter was found to take up water in the damp climate, and the benzoyl chloride decomposed. One of the heavier oils of the paraffin series was then used, and apparently no decomposition takes place. The strength of the injections used has been 2½ per cent. and 5 per cent., 1 c.cm. of which was injected weekly into the muscles of the forearm. The cases treated were not in any way selected, several cases of the anaesthetic type, in which the bacilli are seldom found, being included. Of the cases treated, 17.1 per cent. showed slight or no destruction, 32.8 per cent. medium destruction, 14.2 per cent. advanced destruction, 12.0 per cent. very few bacilli, 37.1 per cent. no bacilli, and 4.2 per cent. died. Experiments are still being carried on.

(*b*) *Red Mangrove Bark in Leprosy.*—Another special treatment being carried on under the care of the bacteriologist was the red mangrove bark treatment of leprosy. Owing to favourable reports from Trinidad on this treatment six cases were treated, but no effect on the nodules, either clinically or bacteriologically, was observed, in a trial extending over six weeks.

(*c*) *The Chlorine Water Treatment of Ankylostomiasis* was another subject of special investigation. The conclusions arrived at are summed up as follows:

1. Chlorine water treatment as an anthelmintic is of very doubtful efficiency.
2. The blood estimations carried out do not indicate any marked improvement in the patient's general condition.

(*d*) *Pyocyaneus.*—This organism, comparatively rare in England, is of frequent occurrence in British Guiana. During the year which the report covers upwards of thirty specimens have been isolated from a variety of cases. The true *B. pyocyaneus* has been isolated from vat waters, and in the analysis of sixty samples of milk its presence has been detected in four. The frequency with which *B. pyocyaneus* occurs in cases with suppurating filarial glands is rather remarkable, seven out of the thirty cases showing this coexistence. The glands of ten showed a greenish tint, due apparently to pyocyaneus. The organism must have a great aptitude for migrating about the body to find a suitable nidus, as in no case investigated had the glands broken down or ulcerated through the skin, so that the possibility of external infection was remote.

Appended to the report are a series of statistical tables, and also reports from the medical officers in charge of the various districts.

Special Correspondence.

PARIS.

Medical Wards of the Paris Hospitals.—Tuberculin Cutaneous Reaction.—Muscular Contractions in Pleurisy.—Diagnosis of Chronic Appendicitis.—Epidemic of Measles.—Aërophagy.—Salvarsan.

A VISITING practitioner or a post-graduate may certainly spend some time advantageously in the medical wards of the various hospitals in Paris; the variety of cases is enormous, and the observation of French methods of treatment may afford useful information. Medicine is more specialized than at home, and on visiting certain wards of a medical service, instead of finding every kind of disease in the ward, one frequently finds practically only heart disorders, or "lung conditions." Each chief usually has special days for consultations; in other words, days with a service corresponding somewhat to out-patient practice in British hospitals. At the Laennec Hospital every Friday at 10 a.m. Professor Barié, whose reputation as a heart specialist is well-known, and whose new book on the heart and its affections is a standard work on the subject, holds a consultation limited to cases of cardiac disorder. To see cases of diseases of the lungs the visitor should pay a visit to Dr. Le Gendre's wards in the Lariboisière Hospital. The different stages of phthisis can be studied as the wards are very large and there is usually a great number of such cases under treatment. French therapeutics can also be noted in this service, as Dr. Le Gendre is a high authority on materia medica, and has the great faculty of being able to prescribe drugs to the best advantage. At the Salpêtrière Hospital Professor Marie, who has charge of the wards in which organic and functional nervous diseases are treated, gives lectures on the various diseases, with demonstration of the patients, limelight projection of microscopical section of the cord or nerves, and lately with cinematograph projections, so that these Saturday morning lectures are most interesting, clear, and instructive. Professor Babinski has wards at the Pitié Hospital, and, needless to say, the demonstration of nervous cases by so high an authority is excellent. The consultations for outdoor patients in this case take place on Wednesdays at 10 a.m. The wards and consultations conducted by Dr. Mathieu at the Saint Antoine Hospital give the visitor an excellent idea of the predominating maladies of the digestive system found in France, and also of the treatment adopted by so high an authority.

At a recent meeting of the Society for Scientific Study of Tuberculosis, Drs. Bernard and Baron brought forward statistics as to the value of the tuberculin reaction in diagnosis. The observations concerned 170 cases on which the cutaneous reaction with Mantoux standard solution had been employed. In 122 of the 170 cases the reaction was markedly positive, and in all these the patients were tuberculous, but their general health was fairly good. In 46 cases the reaction was negative, but the patient's general condition was poor, and tubercle bacilli were present in marked degree; if the general condition improved temporarily the tuberculin reaction was found to be positive though feeble. From their findings in these cases, the authors were inclined to attribute definite importance to the prognostic value of the tuberculin reaction.

At the Medical Society of the Hospitals Dr. Raymond recently described an accessory diagnostic sign in pleurisy with effusion—rigidity of the spinal muscles in the lumbar region beginning just below the twelfth ribs. He pointed out that in inflammation of the meninges reflex contracture of the muscles of the neck occurred; in peritonitis reflex contraction of the abdominal wall. To make out this sign the patient must sit straight up in bed, but not lean forwards, and then both by inspection and palpation the rigidity and hardness of the spinal muscles on the affected side can be made out. Frequently when physical signs of effusion are not present owing to insufficient exudate, an exploratory puncture will reveal the presence of fluid. If the pleurisy becomes bilateral, as is so liable to happen with basal pleurisies, rigidity of the spinal muscles on the opposite side becomes apparent.

Mr. Walther, at another meeting of the same society, pointed out how easily chronic appendicitis might be overlooked. Two cases were cited in which dyspeptic symptoms were accompanied by loss of weight and a persistent hacking cough, accompanied by mucous expectoration. Absolutely nothing was found in the lungs, but there was some tenderness in the right iliac fossa. In both cases appendectomy was performed, and not only did the patients gain considerably in weight, but the previous obstinate cough disappeared completely. Mr. Walther advised removal of the appendix in many cases of incipient phthisis, as the patient was thus frequently relieved from anorexia and constipation, and a noticeable improvement in the general health, accompanied by increase of weight, often followed.

During the seventh week of 1912, 31 deaths from measles were recorded. At present there is a somewhat serious epidemic in and around the city, the total cases reported during January numbering 1,426 in Paris and 218 in the suburbs. The following are the figures given for the last three years:

	Paris.	Suburbs.
	Cases.	Cases.
January, 1910	1,269	366
January, 1911	275	47
January, 1912	1,426	218

Professor Hayem read an interesting report on aërophagy or the swallowing of air at the Society of Medicine, and classified the patients under two headings:

1. "Sialophages," or those patients who, on account of dyspeptic troubles, continuously swallow saliva, which is flowing in abnormal quantity, and swallow air at the same time.

2. "Aërophages," who by a reflex action swallow mouthfuls of air, and thus dilate the stomach with air. This condition is met with in functional nervous cases, and especially neurasthenia and hysteria. This disease, or derangement, was first described in the horse, and M. Picus, who investigated the subject in this animal, confirms the correctness of Professor Hayem's classification. M. Picus has invented an instrument for adjustment in aërophagy in horses, the appliance being so arranged that it acts on the muscles antagonistic to deglutition.

Recently another series of cases treated by salvarsan was reported by Drs. Terson and Dupuy at the Society of Military Medicine. The statistics cover 130 injections given to 50 patients. Of 38 syphilitic cases 30 were cured without any unfavourable after-effects. Ninety-two injections were followed by no ill effects, but in 38 injections some abnormal phenomena were observed. In 1 case there was furuncle of the arm and 4 patients complained of severe headache after injections. In 6 cases injections produced vomiting and in 6 others diarrhoea occurred. In 3 cases albumen appeared in the urine and lasted for several days. Syncope appeared in 2 cases, but no after-effects were apparent.

Correspondence.

HYPODERMIC MEDICATION BY NURSES.

Sir,—May I ask through your columns why the modern nurse should wish to go about with a large assortment of hypodermic tablets in her armamentarium?

I had one of those superior beings employed in a case some time ago. She possessed a very fine case of hypodermic (or should it be hypodermatic?) remedies. Included were such potent drugs as strychnine, digitalin, atropin, morphine, and last, but not least, hyoscin.

Off her own bat, so to speak, she administered one night a hypodermic injection of strychnine, although I had told her not to do so, and had explained to her that my conception of the action of strychnine on the heart was not that generally held, which I looked on as a direction. Her excuse was that the oxygen cylinder had leaked during the night, and that the injection did good.

I asked her under what circumstances she would feel inclined to administer hyoscin. She answered with some acerbity that she would not give it in the present case, which was wise, as the case was one of progressive heart failure with cyanosis.

The point I want to make, however, is that such dangerous—one might say two-edged—remedies should not be in the hands of even such a superior person as the modern nurse, but should be reserved to the medical attendant.

Admiring friends should be able to find a more suitable present for nurses' birthdays and other occasions worthy to be marked with a white stone.—I am, etc.,

February 28th. G. P.

COLOUR DIFFERENTIATION AND COLOUR OF THE EYES WITH THE ANTIENTS.

Sir,—The remarks embodied in Dr. Beaumont's paper in the JOURNAL of January 13th are of interest to the student of language, ethnology, and evolution. The primitive languages are wanting in definitions as regards colours, probably due as much to want of facility in expression as to want of appreciation. Further, it was not necessary to be so definite in denoting and connoting objects and properties as nowadays, when everything is highly differentiated. Homer, with his κύανος, whether blind or colour-blind, had not to deal with modern "coal tar" and its allied colour derivatives.

The Gaelic language affords some parallels to the old Greek in the matter of colour differentiation. In Gaelic the adjective "glas" is used much the same as γλαυκός in Greek (vide Liddell and Scott). In the older language, as a general term, it seems to mean "gleaming," as in the epithet applied to the Gael as a warrior, "Gael glas," the apparent origin of the "Gallow glas" (Irish man-at-arms) of English writers of Irish history.

In connexion with the colour of the eyes it denotes "grey," while in landscape objects it denotes "green." I am indebted to Professor MacKinnon, of the Celtic Chair in the university here, for the following notes on the subject:

"With the old Gaelic writers the most admired colour of the eyes was 'glas' (grey). The exact shade was often fixed by a simile attached to the epithet, and the favourite was the hyacinth. In a very old tale the eyes of a lady whose beauty was proverbial are described thus:

> Ba glaissigtir fri baghai cechtar a da sulu.
> (Was as 'glas' (grey) as hyacinth each her two eyes.)

According to an old writer, Columba's eyes were 'glas.' Upon what authority I know not.

"It is common in Ireland, I believe, to speak of the 'grey' eye as 'glas' still. But in Scotland nowadays, and I believe for a good while back, our favourite colour is blue (gorm). I cannot recall a Scottish Gaelic love-song in which the eye is described as 'glas.' It is always 'gorm' with us.

"Black eyes are also admired, and an eye 'like the sloe' is frequently praised in our modern Gaelic love-songs."

The professor's remarks bear out the development in nomenclature, if not an actual change in racial characteristics down to modern times.—I am, etc.,

Edinburgh, Jan. 17th. JAMES CAMERON.

THE TREASURY COMMITTEE ON TUBERCULOSIS.

Sir,—Insufficient attention has, I think, been paid in this country to a modern conception of tuberculosis based upon the examination of large numbers of children by inoculation tests. Hamburger, of Vienna, found a positive reaction in over 90 per cent. of children at the age of 11. Upon this and confirmatory observations by others, he wrote that tuberculosis is "a true children's disease. Just as everybody goes through measles in childhood, so can we say to-day, almost everyone acquires tuberculosis—mostly during the years of childhood."[1] Dr. J. Kerr concluded:

> So tubercle seems always present, one might say, in the blood. Some slight traumatism of a joint, whether hip or finger, and it may declare itself at the seat of injury, to vanish speedily again if the tissues are given a good chance by physiological rest.[2]

I do not know of any inoculation tests on a similar scale by English observers; the following table presents the results of various central European and one Japanese worker:[3]

Author.	Age of Children (Years).	Positive Reaction (per cent.).
Von Pirquet (Vienna)	10—14	68
Hamburger (Vienna)	11—14	94
Moro (Munich)	10—14	60
Petruschky (Dantzic)	7—14	74
Muller (Berlin)	10—14	53.7
Engel and Bauer (Dusseldorf)	13—14	53
Nothmann (Dusseldorf)	12—14	84.5
Ito (Fukuoka)	13—14	48.6

I was not aware that any scientific worker took Professor Pearson's study of the statistics of pulmonary tuberculosis seriously. Perhaps I may remind Dr. D. W. Hunter that so distinguished a biologist as Mr. Bateson has already concluded that the whole biometrical outpouring is quite valueless, and that a later generation will wonder that it ever obtained a hearing.

Hamburger[4] has recently compared tuberculosis with

[1] *Muench. med. Woch.*, 1908, No. 52; 1909, No. 9.
[2] *School Hygiene*, 1910, No. 1.
[3] Ibid., 1911, No. 6, p. 348.
[4] *Zeitschrift für Schulgesundheitspflege*, 1912, No. 2, p. 121.

syphilis. Tuberculosis has three stages; the tertiary stage is the pulmonary affection. Every human being has a predisposition towards tuberculosis, and 95 per cent. of school children are infected. Infection usually occurs from man to man, and most generally during childhood. If infection takes place during the first year of life, the disease will become manifest at some age or other (80 per cent. of such early infected cases will die); if infection occurs after the first year of life, tuberculosis generally remains latent. It has a marked tendency to recur especially after measles, whooping-cough, and influenza. Prognosis depends (1) upon the age of the child; (2) upon the hygienic conditions, and particularly as to whether the parents are well or badly off.—I am, etc.,

London, W., March 2nd. M. D. EDER.

SIR,—The Chancellor of the Exchequer has done an excellent thing in so promptly appointing a committee to carry out the recommendations of the Royal Commission on human and animal tuberculosis; but to my mind the reference to this Committee is faulty, inasmuch as the framers seem to have had in their minds only the prevention and treatment of pulmonary tuberculosis. The reference ignores the far larger issue upon which the report of the Royal Commission lays such stress—namely, the causation and prevention of the various tuberculous affections which owe their origin to infection by the bacillus of bovine tuberculosis.

I think it is the accepted opinion now that, speaking broadly, the bovine tubercle bacillus is responsible for all the various tuberculous diseases other than pulmonary tuberculosis, and that the latter is caused by infection by the tubercle bacillus of human origin. If we accept this view of the position, we have two sharply defined classes of disease to deal with, differing in their causation, and requiring totally different methods for their prevention and treatment.

The point I wish to make is that it is impossible for this Committee to consider adequately such a mixed question and to report in a reasonable time. It is a question of vast importance to the nation, and the work set before the Committee should be thoroughly done; therefore I suggest that this Committee should be allowed to pursue its investigations according to the reference, and that another committee should be appointed to take into consideration the causation and prevention of those tuberculous diseases which the report of the Royal Commission conclusively proved to be due to infection by the bacillus of bovine origin. The Commissioners time after time insist that milk from tuberculous cows is responsible for the tuberculous diseases—other than pulmonary tuberculosis—in the human subject.

Sir John McFadyean, Principal of the Royal Veterinary College, London, estimated that 20 per cent. of the adult cows in England are tuberculous. If I may indulge in a slang term, the remedy hits us in the eye. Eradicate tuberculosis from our dairy cattle, set up a thorough system of dairy inspection, together with a proper supervision of the milk supply, and we shall practically empty our children's hospitals, and the death-rate from tuberculous diseases will be reduced almost to the vanishing point.—I am, etc.,

Hedon, March 3rd. T. READMAN.

LORD LISTER AND THE CATGUT LIGATURE.

SIR,—If no claim of priority or collateral work is made against Lord Lister he will be fortunate, and the dates assigned to his work will not matter and my letter will be forgotten; if otherwise, it remains a simple statement of a distinct memory of an incident which shows Lord Lister was engaged with this subject before he thought it necessary to put his experiments on record.—I am, etc.,

Bournemouth, March 10th. THOMAS FIELDING.

THE LATE DR. HUGGARD OF DAVOS.

SIR,—We desire to give effect to the widely expressed wish that a suitable memorial should be raised to the late Dr. Huggard. The object we have in view is twofold—first, to place in the Queen Alexandra Sanatorium (an institution which largely owes its existence to his self-sacrificing philanthropy) a memorial tablet, if possible with a medallion portrait of Dr. Huggard; and secondly, to create a Huggard Benevolent Fund in aid of British invalids at Davos who are in need.

We believe that it is not generally realized how many of the patients who go there fail in their pursuit of health through lack of means. The proposed fund will be invested in the names of trustees, and the income spent under the management of a carefully appointed local committee. It would be administered in close connexion with the institution known as the English Nurses' Home, with which it may, if events prove it to be expedient, be afterwards incorporated and united.

We are confident that a memorial on these lines is not only the most fitting tribute that can be paid to the memory of one who lived so much for others, but it is that which would have given the greatest satisfaction to Dr. Huggard himself.

Subscriptions should be sent to Edward C. Simmons, Esq., at 74, Cheapside, London, E.C.. or the London Joint Stock Bank, 120, High Holborn,' crossed "Huggard Memorial Account."—We are, etc.,

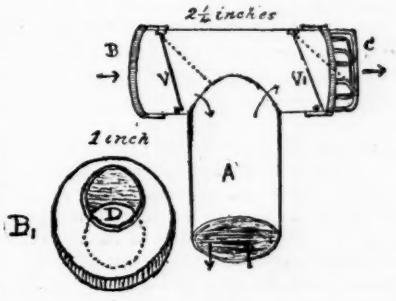
BALFOUR OF BURLEIGH
HENRY ANGST
(British Consul-General, Zurich)
ARNOLD F. BILL
J. MITCHELL BRUCE
W. J. SCUDAMORE EMERY
B. HUDSON
(British Consul, Davos)
GERALD F. MCGAREL HOGG
ROBERT W. PERKS
R. DOUGLAS POWELL
EDWARD C. SIMMONS
D. A. F. VESEY
E. S. WOODS
(English Chaplain, Davos)
H. C. WRINCH.

74, Cheapside, London, E.C., March 7th.

ATROPINE AND OPEN ETHER ADMINISTRATION.

SIR,—Dr. Bellamy Gardner's description[1] of the open method of giving ether is as interesting and practical as are all his communications relating to anaesthesia. But on the point of economy of ether used I should like to ask him if he has ever calculated the quantity as compared with the usual closed method, because this becomes a quite important point in small institutions where strict economy has to be practised.

There is no doubt that even with the greatest care, not only is a larger quantity of ether evaporated, but the atmosphere soon becomes heavily charged with the vapour. In an endeavour to obviate these disadvantages, I must plead guilty to having devised yet another addition to the anaesthetist's armamentarium, and have found it, during the last three years, answer its purpose very well in a large number of cases, but not in all. It consists of a T-piece, to be substituted for the usual angle-piece and bag. At either end of the cross piece are light mica valves, V and V_1; working on hinges from the top, as shown in the sketch. The end B is closed, except for an aperture placed excentrically; over it fits a cover with milled edge having a similar aperture in a corresponding position, the cover revolving easily. When it is in position as B_1, the inlet D is at its smallest size; by rotation it can be enlarged till both apertures coincide. The same effect could be obtained by means of a diaphragm, but would not be so easy to keep clean. Air is inhaled at B, more or less as required, passes over the ether chamber and the exhalations escape at C, which



[1] BRITISH MEDICAL JOURNAL, February 24th, 1912, p. 422.

terminates in a little cage to protect the mica valve. Each inspiration and expiration is marked by a distinct "click" of the valves, the force and regularity being a good indication of the breathing both to the administrator and the surgeon. The end C can be directed away from both of them.

I generally induce anaesthesia with nitrous oxide gas and the bag in position, giving ether moderately till breathing is regular, then remove the bag and substitute the T-piece, turning ether on rather more at first. The amount of air admitted and ether used can then be nicely regulated, but the pointer must *generally* be at about 3. If the inhaler is warmed, the less need the ether chamber be opened. The quantity of ether used is very slightly in excess, if at all, of that required by the closed method. The effects on the patient are as good as in the open method, but there is, of course, a limit to the proportionate strength of vapour inhaled, so that for some strong men it will not always answer for long, but at any moment the bag can be replaced and some rebreathing allowed. A mouth prop can always be used if necessary, and I have occasionally had to fix the ring tongue-clip employed by Dr. Bellamy Gardner.

The little apparatus was made for me by Messrs. Mayer and Meltzer.—I am, etc.

WALTER GRIPPER,
Anaesthetist to the Carshalton District Hospital.

Wallington, Feb. 27th.

ACTINOMYCOSIS.

SIR,—In the reports of the cases of actinomycosis of the lung which appeared in the BRITISH MEDICAL JOURNAL for February 10th and February 17th no mention is made as to whether any examination of the nose and accessory sinuses was made. In June, 1911, in conjunction with Mr. Edgar Stevenson, I published a case of actinomycotic meningitis due to sphenoidal sinus suppuration, causing death four days after excision of the right eye (*Ophthalmoscope*). In this case the patient was admitted for panophthalmitis following injury, and four days after excision of the eye died of meningitis.

At the *post-mortem* examination extensive disease of the sphenoidal sinuses was found, both sinuses communicating freely with the base of the brain. The organism was found to be actinomyces, and the cause of the meningitis was undoubtedly due to extension of disease from the sphenoidal sinuses.

In looking up the literature on the subject, though I found plenty of reported cases of actinomycotic meningitis and actinomycosis of the lung, I could find no mention of a nasal examination having been made. After my own case I have wondered if, in all probability, some at least of the other many cases of actinomycosis may not also have been due to undiscovered accessory sinus suppuration, and I think it would be of interest if in future cases of this rare disease writers would make a point of examining the nose.—I am, etc.,

Liverpool, Feb. 18th. ADAIR DIGHTON.

THE PATHOGENIC PROTOZOA.

SIR,—The deep importance of all that concerns pathogenic protozoa leads me to ask you to publish this note based on the interesting review of v. Prowazek's work in your issue of February 24th.

As regards *Molluscum contagiosum*, I would strongly urge all who have facilities to place the pearly growths removed with cleanly care and slightly broken up by needling in tap-water in cupped slides in moist chambers made of pairs of Petri dishes containing moist filter paper. The preparations can be at room temperature at night and at blood heat by day. Whatever other forms the protozoon may assume I am convinced that the molluscum corpuscles are not "reaction products," although it is very difficult to reproduce the exact conditions in which they assume the striking vital processes I described in 1895. The preparations should be examined frequently during the first five days. The plastic bodies with streaming protoplasm described in Part II of my *Protozoa and Disease* can readily be found.—I am, etc.,

London, W., Feb. 25th. J. JACKSON CLARKE.

THE NEW CELL PROLIFERANT.

SIR,—With regard to the scientific points in Mr. Walker's letter (p. 582), the facts are (1) that the ascaris eggs used by us did not often divide in water or in salt solution, but that they did divide very frequently under the same conditions in solutions of auxetics; and (2) that human white blood cells never divide on plain jellies, but that they do divide very frequently on auxetic jellies. From these and other facts we infer merely that these auxetics in some way bring about cell division, and we are seeking to follow this clue as far as it will lead us. But we do not say that no other substances or processes are also favourable to cell division, and if other substances and processes are favourable to cell division, the fact will not invalidate our work.

Mr. Walker says that the induced division of lymphocytes does not resemble mitotic division. I cannot help that; I have described merely what we have seen. But the matter can be, and has been, discussed at length. He states that he has repeated some of our studies and cannot agree with our interpretations. The technics are very difficult, and therefore I would rather not accept his opinion until I know for certain that the procedure used by him is the correct one, and that it has been used with a genuine wish to succeed. We ourselves have succeeded after innumerable trials.

About his refusal to let me use his plates, my publisher wrote to him on my behalf, and, of course, I became acquainted with the nature of his reply. As I have said, I consider it to be a discourteous refusal. From this I judge that Mr. Walker is not favourably inclined towards our work, and I am very sorry to have to arrive at this opinion.

I may add that J. Loeb himself has recently stated, in a paper in the *Popular Science Monthly* (January, 1912), that "All agencies which cause a definite type of cell destruction—the so-called cytolysis—cause also the egg to develop, as long as their action is limited to the surface layer of the cell." It is with the substances produced by cytolysis that we have for some years past been inducing cell division, and it was with these self-same "auxetics" that we induced the development in the eggs of *Ascaris megalocephala*.—I am, etc.,

London, S.W., March 12th. H. C. ROSS.

THE PROFESSION AND POLITICIANS.

SIR,—It was not originally my intention to intervene in this discussion, and I only do so now because Dr. Beckett-Overy has made so many grave misstatements in his short letter that I think they deserve refutation at the hands of the person responsible for the internal arrangements of the Queen's Hall meeting.

In the first place he says that the meeting was partly organized from the Hammersmith Constitutional Club. This is incorrect. The only member of the Executive Committee who is also a member of that club is myself, and I can authoritatively state that no meeting connected with the Queen's Hall meeting was held within its walls. I plead guilty to having used the club notepaper to make notes upon, and I may possibly have written a letter or so from there, but that is the sole extent to which the Hammersmith Constitutional Club is interested in it. It would be as reasonable to charge the organization of the meeting to any other club or institution to which any other member of the Executive Committee might happen to belong. To add to the exquisite humour of Dr. Beckett-Overy's suggestion may I say that Dr. David Walsh, the secretary to the whole committee, is a member of the National Liberal Club, and conducted much of the correspondence from within its august portals?

Not satisfied with saddling the members of the Hammersmith Club with the organization of the meeting, Dr. Beckett-Overy further suggests that it was responsible for obtaining the stewards. This is again incorrect. The facts are as follows: I arranged with my friend Mr. Wilfrid Travers (who is not a medical man) to supply me with a certain number of men who were in the habit of stewarding large meetings to act as chief stewards. This arrangement was made in Mr. Travers's offices at Westminster, and had nothing whatever to do with the Hammersmith Constitutional Club. In addition, I caused

a circular letter to be sent to the Dean of each metropolitan hospital asking for students to act as stewards under the direction of the trained men whom Mr. Travers selected. The result was that eighty medical men and students offered their services, which were utilized under the circumstances related above.

With regard to his third statement, I have no knowledge. If Dr. Beckett-Overy will have the courage to publish the name of the member of the committee who told him "They would not hear Horsley" I may be able to say more about it. Assuming it to be correct, it is to be doubted whether it was anything more than an expression of opinion on the part of the individual member; but if Dr. Beckett-Overy suggests that any of the committee instigated or organized the "shouting down" of Sir Victor Horsley I indignantly repudiate it. With reference to any particular steward having been "told off" to "mark" Sir Victor Horsley, Dr. Beckett-Overy is again misinformed. The committee were not aware that Sir Victor was coming, and even if they had been they were not in a position to know in what portion of the hall Sir Victor Horsley would take his seat. Moreover, the chief steward in charge of that section was a gentleman who did not even know Sir Victor Horsley by sight

I regret that it has become necessary to prolong this controversy, but I think the organizers would be unfair to themselves did they not contradict the mass of absurd statements that Dr. Beckett-Overy has strung together. The proofs of the truth of the statements I have made in this reply I am prepared to produce in the columns of the JOURNAL, should the accuracy of what I have written be impugned by Dr. Beckett-Overy or any one else.—I am, etc.,

PERCY C. RAIMENT.
Honorary Secretary, Executive Committee, Queen's Hall Meeting.

Brook Green, W., March 9th.

POST OFFICE MEDICAL OFFICERS: THEIR OPPORTUNITY FOR JUSTICE.

SIR,—I was glad to see "Pastor's" letter; I feel confident that the majority of such officers are ready to support the Secretary (Dr. Giddings) of the British Postal Medical Officers' Association. May I urge the members to write at once to the Secretary, Hillsborough House, Mansfield Road, Nottingham?

In recent years the Postmaster-General has imposed several important conditions on the Post Office doctors which are most objectionable and unjust. In fact, I cannot conceive of the Postmaster-General in his private capacity, or any ordinary man of business integrity, asking a doctor to undertake onerous extra work without fair payment and with hearty consent. The Government recently has sought to improve the conditions and payment of all departments of the Post Office service. The doctors alone are to be exploited.—I am, etc.,

March 11th. JUSTITIA.

STANDARDIZATION OF PANCREATINS.

SIR,—I should like to endorse the plea made by Mr. Shelly for standardization of preparations of pancreas, but chiefly on therapeutic grounds.

I have been repeatedly asked to see patients in consultation who had been taking pancreatic extracts of various kinds, often for considerable periods, without receiving any benefit, but when I have prescribed for them a preparation which laboratory experiments had shown to contain active ferments their indigestion has disappeared, they have put on weight, and analyses of the faeces have shown a diminution in the amount of unabsorbed food.

A few years ago I tested samples of all the commercial preparations of pancreas that I could meet with, and was surprised to find what a large proportion were inert, others had more or less proteolytic and amylolytic power, but there were very few that possessed marked fat-splitting properties.

I am quite sure that if a method of standardization were adopted, not only for proteolytic enzymes but also for starch and fat-splitting ferments, which are equally important clinically, much more satisfactory and uniform results would be obtained in cases of "intestinal indigestion," pancreatic insufficiency, etc. than is now the case.—I am, etc.,

London, W., March 9th. P. J. CAMMIDGE.

Obituary.

JOHN CHAUNDY CLARKE, M.R.C.S., L.S.A.,

MORLEY.

THE death of Dr. J. C. Clarke removes a striking figure from among the practitioners of Morley, and, indeed, of Yorkshire. He was born in Derbyshire in 1840, and received his medical education at Guy's Hospital, taking the diploma of M.R.C.S. in 1863, and that of L.S.A. in 1868. He went to Morley in 1863 as assistant to the late Dr. Ellis, after a time removing to Gildersome to start on his own account. On the death of Dr. Ellis he returned to Morley, and in 1874 took Bank House, where he lived and practised for thirty-one years, and here most of his children were born. His energy and abilities in course of time brought him a large and scattered private practice, which consequently entailed riding many miles every day. In addition to this, he became the medical officer to various life assurance offices, as well as to most of the neighbouring mills and collieries. Skilful, manly, and sympathetic (the last gift being especially marked in him), his advice and example were a blessing to his patients and those assistants who were fortunate to come under his influence. It will be a long time before the memory of "Old Clarke," as he was often familiarly and affectionately called, passes away. Retiring from the greater part of his private work in 1905, and leaving his practice in the hands of his second son, who had been for some years in partnership with him, Dr. Clarke removed to a house on the outskirts of Morley, but still retained his appointment of factory surgeon. This work he was doing up to and on the day of his death. The end came peacefully in the afternoon of February 21st, from heart failure. He died, as he wished to, almost suddenly, and whilst still in harness. Dr. Clarke was twice married, and leaves a widow and eight children. He was buried on February 26th in the churchyard of St. Peter's, and all Morley showed, by drawn blinds, flowers, and, where possible, actual presence at the grave, their respect and affection for John Chaundy Clarke.

C. W. A.

RICHARD DILL, M.D.EDIN.,

BURGESS HILL.

DR. RICHARD DILL, formerly a very well-known figure in Brighton, died at his residence at Burgess Hill, Sussex, on February 24th, in the 90th year of his age. He had been resident in that place for some twelve years, and both before and after settling there as a retired practitioner had helped greatly to promote its interest by advocacy of the hygienic and other attractions of the locality. His active life was passed at Brighton, where he co-operated in one of the most important practices in the town during the greater part of the last fifty years of the nineteenth century. He was of mixed Irish, Scottish, and English blood, his father being a descendant of a family which settled in Ireland at an early date in English history, and his mother one of two sisters, the last representatives of the Gordons of Glenbucket.

His professional education he acquired at Edinburgh University, where he became M.D. in 1845. On completion of his studies, there was at first some question of his remaining permanently in Edinburgh under the auspices of Simpson, one of whose favourite pupils he had been. In the event, however, he went on an expedition to China, remained there for some time, and, on his return, decided to join an uncle who was already in practice in Brighton. The decision proved not unwise, for he prospered greatly in Brighton, and, though some of his friends considered he would have done better still if he left that place for the metropolis, he remained faithful to it to the end of his professional career.

During a considerable proportion of his time in that town he had the pleasure of having associated with him in his work one of his own sons, Dr. J. F. Gordon Dill, a former Chairman of the Brighton Division of the British

Medical Association, and at the present time Senior Physician of the Sussex County Hospital. Dr. Richard Dill, who celebrated his golden wedding some six years ago, is survived by his wife, by two sons, one of whom has already been mentioned, and by two daughters. Another son, who died some years ago, was also a medical man and an officer in the Royal Army Medical Corps.

WE record with deep regret the death of CHARLES PARNHAM SKRIMSHIRE, M.R.C.S.Eng., L.S.A., who passed away on February 22nd at Sand Haven, St. Paul's Road, Weston-super-Mare. Death was due to hemiplegia and cardiac failure. Dr. Skrimshire, who was the fifth son of the late Dr. George Skrimshire, of Holt, Norfolk, was born on October 15th, 1844, and was one of four brothers who followed their father's profession. He studied medicine at St. Bartholomew's Hospital, London, and was senior scholar of his year. He had an eminent and successful medical career in Wales, first at Llanelly, near Crickhowell, as partner with the late Dr. W. F. Tuckett, to whose practice he eventually succeeded, and one of whose daughters he married. After between eight and nine years in practice at Llanelly he removed to Blaenavon, Monmouthshire, where for eleven years he was head doctor for the Blaenavon Iron and Steel Company, and he then retired to private practice in the same town. On account of failing health he finally retired in November last and went to reside in Weston-super-Mare in the hope of some years of quiet yet useful service. During his career he held the following appointments: Medical Officer of Health for Brynmawr Urban District Council and Llanelly Rural District Council; Medical Officer to the Crickhowell Union; Public Vaccinator for Brynmawr and District; Medical Inspector of Factories for the Blaenavon Company. He was a member of the British Medical Association, and formerly held the position of President of the Eastern Valley Medical Association. Dr. Skrimshire was earnest in everything he undertook, and had a distinguished career as a Volunteer, being late Brigade-Surgeon of the South Wales Volunteers Infantry Brigade, Surgeon-Lieutenant-Colonel (V.D.) 1st Brecknockshire Volunteer Battalion South Wales Borderers, and was granted the Volunteer Decoration for long service. He was a prominent Freemason, having held the position of Worshipful Master of the Kennard Lodge. He leaves a widow and four sons and three daughters; the eldest son is Head Master of the English High School for Boys in Constantinople, and his second son the former well-known Welsh International Rugby football player, now in South Africa.

WE regret to announce the death of Dr. ARMAUER HANSEN, of Bergen, the discoverer of the bacillus of leprosy. The discovery was made so long ago as 1871. Born at Bergen in 1841, Dr. Hansen was appointed Physician to the Lungegaard Leper Hospital there in 1869. He studied microscopy and dermatology at Bonn and Vienna in 1870 and 1871. In 1881 he was appointed Director of the Lungegaard. Dr. Hansen took an active part in the organization of leper hospitals in Norway with the view of segregating lepers; but the segregation was never, we believe, made compulsory. At any rate, in the mid Eighties we remember seeing obvious lepers mingling freely with crowds in the street. Dr. Armauer Hansen was a man of unassuming manners and amiable character. He was a son-in-law of Danielssen, author of what was once regarded as the classic work on leprosy. Dr. Armauer Hansen was in his 71st year.

WE regret to announce the death, on March 2nd, at his residence, Upper Norwood, of Dr. G. STANLEY ELLIOT. Dr. Elliot, who was the son of a well-known surgeon in Exeter, had two brothers in the medical profession. He was born in Devonshire in 1844, and received his medical education at the Worcester Infirmary and in Edinburgh. He took the diplomas of L.R.C.P. and L.R.C.S.Edin. in 1867; he held consecutively the post of House-Surgeon at Salop Infirmary, Assistant Medical Officer at Colney Hatch Asylum, at Worcester County Asylum, and at Coton Hill Institute for the Insane. He was appointed Medical Superintendent to the Metropolitan Asylums Board Asylum at Caterham in 1879, from which post he retired on a well-earned pension in 1901. He had become M.R.C.P.Edin. in 1873 and F.R.C.S.Edin. in 1879. Dr. Elliot was a man of wide culture, had read and assimilated much, travelled extensively, and possessed a keen insight into the characters of men. His courteous bearing and honourable conduct endeared him to every one; he had no enemies but many friends, by whom he was much beloved, and who were proud to minister to him during his last long illness. He suffered from grave heart disease with complications, which made him an invalid for several years, and which ultimately proved fatal.

After life's fitful fever he sleeps well.

THE death has occurred at his residence at Lee, Blackheath, of Lieutenant-Colonel G. W. MCNALTY, C.B., a Fellow of the Royal College of Surgeons of Ireland and M.D.St. Andrews, who, after serving some thirty years in the army, retired with the rank of Brigade-Surgeon-Lieutenant-Colonel in 1892. During his career, which was one of considerable distinction, he gained an exceptionally large experience of war operations, though not always in the capacity of an officer in the Army Medical Department. On two occasions he served with foreign troops—first, as Medical Officer of the English ambulance during the Franco-German war of 1870–1, and next as Commissioner and Chief Surgeon to the National Aid Society in the Russo-Turkish war of 1876–7. He was also present at all the principal engagements during the Ashantee war of 1873–4, the Afghan war of 1878–80, and in the first Egyptian expedition in 1882. While in India he was an Honorary Surgeon to the Viceroy, and received the Companionship of the Bath at the Diamond Jubilee. At the time of his death he was in the 75th year of his age.

BRIGADE-SURGEON HENRY ELMSLEY BUSTEED, Madras Medical Service (retired), died in London on February 1st, aged 79. He was born on December 4th, 1832, took the M.D., Queen's University, Ireland, in 1854, and the M.R.C.S. in 1855, and entered the Indian Medical Service as Assistant Surgeon on August 4th, 1855. He served with the Horse Artillery in the Indian Mutiny, and took part in the relief of Lucknow, the relief of Cawnpore, and the operations against the Gwalior contingent, receiving the medal with a clasp. In 1861 he was appointed Civil Surgeon of Cuddalore, the civil station attached to the ancient Fort St. David, and in 1865 entered the Madras Mint as Assistant Assay Master, and in the Mint he spent the rest of his service. In 1870 he was transferred as Deputy Assay Master to Calcutta, and in 1872 was appointed Assay Master, a post which he held, occasionally acting as Master of the Mint, until his retirement, with a step of honorary rank, on June 1st, 1886. He became Surgeon on August 4th, 1867, and Surgeon-Major on July 1st, 1873, but rose no higher in the service, as medical officers employed in the Mint were then not eligible for further promotion. Even now, they are debarred from promotion to the administrative grades. He received the C.I.E. on January 1st, 1887, after his retirement. He will be best remembered, however, as the author of that charming book, as Lord Curzon called it, *Echoes of Old Calcutta*. First published in 1882, subsequent editions were issued in 1888 and 1897, and a fourth, rewritten and considerably enlarged, in 1908. He also published, in 1903, a pamphlet, *The Serampore Portrait: Is it Madame Grand?* afterwards incorporated in the fourth edition of *Echoes*, in which he conclusively proved that the famous picture in the Baptist Mission, Serampur, long supposed to be a portrait of the lady known successively as Mdlle. Noel Werlée, Madame Grand, and Princesse de Talleyrand, was in reality a picture of a Danish princess.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. E. Caventon, sometime President of the Paris Academy of Medicine; Dr. V. P. Ivanovsky, formerly Professor of Pathological Anatomy in the Army Medical Academy, St. Petersburg; Dr. Emil Stoffella d'Ata Rupe, Emeritus Professor of Internal

Medicine in the University of Vienna, aged 76; Dr. Dittmar-Finkler, sometime Professor of Hygiene in the University of Bonn, in his 60th year; Dr. Hermann Jastrowitz, of Berlin, a well-known authority on mental diseases, aged 72; Dr. A. Negri, Lecturer on Bacteriology in the University of Pavia, known by his researches on rabies, on the prophylaxis of malaria, and on the protozoa; Dr. E. Cestan, Professor of Clinical Surgery in the Medical Faculty of Toulouse; Professor Heinrich Ehlers, who was for a long time head of the Gynaecological Clinic of the Duke's Hospital at Brunswick, in his 72nd year; and Professor D. W. Reye, for many years Director of the Hamburg Asylum for the Insane, in his 80th year.

Universities and Colleges.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on February 21st.

Charles Graham Medical Research Scheme.

Dr. Charles Bolton, D.Sc., F.R.C.P., was appointed for a period of one year from January 1st, 1912, Director of Research under the Charles Graham Research Scheme.

Grants by the Goldsmiths Company.

The cordial thanks of the Senate were voted to the Worshipful Company of Goldsmiths for their recent generous gifts of £10,000 to the building fund of King's College for Women, £5,000 to the Endowment Fund of Bedford College, and £1,000 to the building and equipment fund of the chemical laboratories at University College.

Amendment of Regulations in Medicine for Internal and External Students.

It was resolved that Sections V and VI of the regulations with regard to exemptions in medicine (Red Book, September, 1911, p. 147) be amended to read as follows:

(v) Students who have passed an Intermediate Examination in *Arts*, Science, or Agriculture, with Chemistry, or Physics, or Botany and Zoology,* will be exempted at the First Examination for Medical Degrees from examination in the Subjects in which they have passed, provided that they have completed the required Courses of Study.

(vi) Students who have passed the *B.A.* or B.Sc. Examination, with Physics, or Chemistry, or Botany and Zoology,* will be exempted at the First Examination for Medical Degrees from examination in the Subjects in which they have passed, provided that they have completed the required Courses of Study.

The foregoing amendments were adopted, *mutatis mutandis*, for External Students.

(Note.—The words in italic are those inserted in the Regulations.)

Appointment of Representatives.

The Chancellor has appointed Sir James Barr, F.R.C.P., to be representative at the Court of the University of Liverpool for the remainder of the term of three years ending December 31st, 1914.

Professor W. D. Halliburton, F.R.S., has been appointed by the Senate a member of the Committee of Management and of the Medical School Committee of King's College Hospital.

University Students in Physiology.

A university studentship in physiology will be awarded to a student qualified to undertake research in physiology, and will be tenable in the Physiological Laboratory of the University or of a school of the University. Applications must be received by the Principal on or before May 31st.

Training Course for Lectures.

In connexion with the training course for lectures arranged by the University Extension Board to be held during the summer terms, 1912, Dr. H. H. Hulbert will deliver four lectures on the management of voice.

UNIVERSITY OF MANCHESTER.

Extension of the Physical Laboratory.

PROFESSOR ARTHUR SCHUSTER, Honorary Professor of Physics, opened the new extension of the Physical and Electro-technical Laboratories of the Manchester University on March 1st. The Vice-Chancellor (Sir Alfred Hopkinson), who presided, said that the building, which was opened about twelve years ago, owed its present form to plans drawn by Professor Schuster after seeing what was done in other countries, and at the time they thought it was the last word in the building and fitting up of a physical laboratory. Since then the work had grown enormously, and the extensions were intended to consolidate in one building work which had hitherto been separated, and to provide further accommodation for special research.

Before declaring the building open, Professor Schuster said that when he joined the staff in 1882 the great possibilities of the practical applications of electricity were just beginning to be realized. Evening classes in the subject were commenced, and shortly afterwards a small dynamo house was obtained. As to the technical instruction supplied by the university, there was a special faculty of technology at the municipal school, and the division of the teaching between that and the faculty of science was perhaps not altogether logical, but the two institutions had grown up independently, and, though there was a great deal of talk of overlapping, he did not think in this case that it implied waste. The best adjustment that could be provided was not by a strict definition of what was to be taught in one building or another, but by a cordial and friendly intercourse between the teachers themselves, and by an interchange, where advisable, of students between the classes of the two institutions. He had been much disappointed to find that many students who might have a prosperous career if they would go abroad did not do so. There was a great field for students of physics in India and the Colonies. There were numerous good appointments in the meteorological and physical departments of the universities of India which might fall to many of their good men.

Mr. J. W. Beaumont, the architect of the new building, presented a gold key to Professor Schuster, and a hearty vote of thanks was passed, to which Professor Schuster responded.

On the same occasion the honorary degree of Doctor of Science was conferred on Mr. S. Z. de Ferranti, President of the Institute of Electrical Engineers, and one of the pioneers of electrical engineering in this country.

The main building of the laboratories was opened by Lord Rayleigh in 1900, and the extension consists of two wings on the north and west sides of the dynamo house. The ground floor is devoted solely to electro-technical work, the electro-chemical work being carried on in its old quarters. The first floor of the west wing includes a large lecture room, while the same floor of the north wing provides a number of small research rooms intended mainly for Professor Rutherford's researches in radio-activity, which require a certain amount of isolation.

UNIVERSITY OF BIRMINGHAM.

MEDICAL FACULTY.

PROFESSOR PETER THOMPSON has been appointed Dean of the Medical Faculty, in succession to Professor Gilbert Barling, who has held the office with great success ever since the retirement of Professor Windle, over seven years ago.

SOCIETY OF APOTHECARIES, LONDON.

Association of Certificated Dispensers.

THE sixth annual meeting of this association was held in the Court Room of the Apothecaries' Hall, Blackfriars, E.C., on Thursday, March 7th. Mr. Montagu Smith, Lewisham Infirmary, presided.

The financial statement showed a net credit balance of £81 11s. 10d., and the annual report a steady increase in the membership, now over 500, the largest association of dispensers in existence, large numbers having joined for protection against the unsettling tendencies of the Insurance Bill. The Committee and Honorary Secretary have taken care that the interests, rights, and privileges of the members were brought to the notice of every member of the House of Commons, and deputations had been received by members of the Government, resulting in a special clause being added to the dispensing clauses for the benefit of holders of the Hall certificate. A petition had been forwarded to the Privy Council with reference to powers given to the Pharmaceutical Society under Section 4, Subclause B, of the Poisons and Pharmacy Act (1908), to make a by-law. A bill proposed by the Society of Apothecaries with the object of bringing the certified dispensers and the examination more into line with modern requirements, introducing, amongst other matter, a preliminary examination in general education, period of training, an age limit, title, registration, and other improvements, will be submitted to Parliament at an early date. Many members were successful in securing dispensing appointments in the public services, and a large number temporary or permanent berths through the employment agency kept by the Honorary Secretary. The members of committee were re-elected, and the name of Dr. C. Addison added to the list of patrons. Mr. Derbyshire, of the Royal General Dispensary, was appointed an Assistant Secretary. Votes of thanks to the Master and Wardens for the use of the court-room, the Chairman, and Honorary Secretary terminated the business.

UNDER the will of the late Mr. George Hablo, the Manchester Hospital for Consumption and Diseases of the Throat and Chest receives a sum of £5,000 for the endowment of a ward.

THE Bombay correspondent of the *Times*, telegraphing on March 6th, states that Mr. Ratan Tata has offered £1,000 annually for ten years for a crusade against tuberculosis. The idea has received the approval of the Government of India, and the support of the Bombay Municipality and the millowners is anticipated. Phthisis is especially prevalent among the *purdah* women.

* No exemption in General Biology at the First Examination for Medical Degrees will be granted to Students who have not passed an Intermediate Examination in *Arts*, Science, or Agriculture, or the B.Sc. Examination, with Botany and Zoology.

Medico-Legal.

CONTRACT WITH LOCUMTENENTS.

The question of the amount of notice to which a locumtenent is entitled was raised by an action tried in the Clerkenwell County Court on March 4th. In this case, according to the report in the *Times*, the plaintiff claimed £19 4s. as salary for four weeks and four days, and £7 4s. as the sum equivalent to board and lodging for the same period. He had been engaged, he said, to act as locumtenent for a period running from November 30th to January 16th in return for four guineas a week and board and lodging, but about a fortnight after commencing his work he fell ill, and had to take temporary rest; on returning to his duties, however, the defendant refused to allow him to complete his contract. Pleading his case on his own behalf, the plaintiff argued that his claim was justified because the relation between locumtenent and employer was that of master and servant. At any rate, there was not any general custom of contrary effect in the profession, nor any established rule, as testified by the defence, that a locumtenent was dismissible at 48 hours' notice. Each medical agent had his own rules, and these varied. If the principal were ill a locumtenent was engaged for an indefinite period, and if engaged by the day was engaged at the rate of a guinea a day.

For the defendant, evidence was given by a medical agent, to the effect that there was a custom in the profession that 48 hours' notice would terminate such an engagement as that of the plaintiff; and the defendant, giving evidence on his own behalf, stated that he had been engaging locumtenents for many years, that they were engaged for so much a day, and were never entitled to more than 48 hours' notice. It was also argued on his behalf that though locumtenents were usually paid weekly, this was only for convenience, because, strictly speaking, their contracts were temporary and only for so much a day, and that by established usage of the medical profession a principal was entitled to dismiss a locumtenent at practically a moment's notice.

His Honour, in giving judgement, said that the plaintiff fell ill and another locumtenent had to be engaged. The plaintiff took up the position with regard to the principal that "although you have to pay somebody else, you must pay me as well." That was what the claim in the case was. It seemed to him impossible to accept that conclusion. The principle of the law of master and servant—that illness did not interfere—did not apply to the case, and judgement must be for defendant, with costs. The plaintiff had a right to appeal if he wished to do so.

It is to be noted that, as reported by the *Times*, the judge in this case does not seem to have given any direct answer to the question of the amount of notice to which a locumtenent is entitled, and still less to the converse question of the amount of notice that a principal is entitled to receive.

The two points can be safeguarded, of course, by the wording of the contract signed between the locumtenent and principal, but it is common for principals to entrust their work to locumtenents with whom they have no formal contract, and for locumtenents to commence work on merely verbal arrangements. It seems certain that if locumtenents believed that they were subject to dismissal forthwith the number of candidates for such appointments would be fewer than it is, and that if principals believed that their locumtenents were entitled to give up their positions at their pleasure in the same way, they would leave home with even less tranquil minds than is at present the case.

Public Health
AND
POOR LAW MEDICAL SERVICES.

HOUSES UNFIT FOR HABITATION.

Action by the Scottish Local Government Board.

In connexion with the administration of the Housing, Town Planning, etc., Act, 1909, the Local Government Board for Scotland has just issued an order and explanatory circular with respect to the procedure for closing dwelling-houses unfit for human habitation. The procedure, as prescribed by Sections 17 and 18, has given local authorities considerable anxiety during the past year, leading in some cases to troublesome legislation both in the supreme and inferior courts. The Board sympathizes with local authorities which are met by legal difficulties of a purely technical character in administering the Act, and accordingly, in its circular, draws special attention to certain points that have come under the review of the courts.

First, as regards the issue of notices, the Act prescribes that "notice of a closing order shall be forthwith served on every owner of the dwelling-house in respect of which it is made." The Board refers to a recent case before the sheriff at Airdrie, in which objection was taken on the ground that the proceedings of the local authority were inept in respect that every owner had not been served with a notice. It appeared that in the sense of the Housing Acts all the owners were not known, since "owners," as defined by Section 49 of the Housing, Town Planning, etc., Act, include mortgagees. One of the parties who had not been served with a notice was shown to be in possession under a decree. Others were also interested in the subject. It was agreed that it was not reasonably possible for the district committees to discover mortgagees, etc. The local authority quite innocently might serve on one person with only a small interest, while one with a large interest might be omitted. With a view to avoid any question arising out of the failure to include every owner in the address, the Local Government Board has amended the form of its order, so that the address shall be "to A. B. (say) and others, owner or owners of the dwelling-house" in question.

Another point with regard to the Board's form of closing order was stated very fully by the Lord President of the Court of Session on December 21st, 1911, when advising in the case of Kilpatrick *v.* the Local Authority of Maxwelltown. The question in that case was whether the closing order was inept in respect that it failed to disclose with sufficient specification the grounds for making it. The Board's form is somewhat similar to that issued by the English Local Government Board, and is, as his lordship said, really an echo of the Act itself. It contained no provision for specifying the defects. While, therefore, the Court held that it was not necessary to determine that the closing order was inept on these grounds, Lord Dunedin was of opinion "that it might be well if the Local Government Board considered whether they might not, to a certain extent, amend the form with that in view," so that, "in serving the order, there should be some reference added as to what the grounds of defect of the house consist in." The Board has accordingly amended the form to give effect to his lordship's suggestion.

Another interesting point, raised both in the Maxwelltown case and in the case of Johnstone's Trustees *v.* the Special Committee of the Corporation of Glasgow, was whether the expression "dwelling house" in Section 17 of the Act of 1909 meant and included a whole tenement. In the Maxwelltown case the tenement comprised four dwelling-houses, in the Glasgow case some forty odd houses. The question was whether, as in the Glasgow case, it was necessary to pronounce (say) some forty-one closing orders. The Court of Session held that the expression "dwelling-house" may include a whole tenement, and, therefore, a separate closing order for each house was unnecessary.

In conclusion, the Board in its circular warns local authorities of the necessity of retaining the note to its prescribed forms giving particulars of the statutory provisions as to the right of appeal possessed by owners of dwelling-houses affected, and cite the English case of Rayner *v.* Mayor, etc., of Stepney, where the omission of the note led to an injunction of the High Court being granted restraining further proceedings on the ground that the notice served did not inform the owner of his right of appeal to the Local Government Board. In Scotland, however, this appeal is to the sheriff, and by an Act of Sederunt dated November 4th, 1910, the Lords of Council and Session determined the rules of procedure in appeals to the sheriff, which should be carefully observed.

Medical News.

Lord Haldane will preside at the annual meeting of the County of London Branch of the British Red Cross Society to be held at Grosvenor House, on March 27th, at 4 p.m.

Lord Rosebery will preside at the annual meeting of the Royal National Hospital for Consumption, Ventnor, which will be held at 18, Buckingham Street, Strand, on Thursday next, at 4 p.m.

The Royal Dental Hospital, Leicester Square, has received donations from the Grocers Company, £100; from the Drapers Company, £10 10s.; from the Armourers and Brasiers, £5 5s.; and an annual subscription of £5 5s. from the Carpenters Company.

The annual meeting of members and subscribers of the London Medical Graduates' College and Polyclinic will be held at the College, 22, Chenies Street, W.C., on Friday, March 22nd, at 5.15 p.m. Mr. James Cantlie, F.R.C.S., will take the chair.

A lecture on the connexion between hydrographical and meteorological phenomena, will be given by Professor Otto Pettersson at a meeting of the Royal Meteorological Society to be held on Wednesday, at 7.30 p.m., in the Institution of Civil Engineers, Westminster.

The firm which has been familiar to many generations of medical men as makers of Ward's adjustable couches has now become John Ward, Limited, and has its showrooms at 246–7, Tottenham Court Road. Its new catalogue, which has as frontispiece a picture of a sedan chair supplied to Windsor Castle by the firm in the reign of George II, gives a good idea of its principal manufactures, and also information as to the department from which furniture for invalids is issued on hire.

At a meeting of the Council of the North of England Branch on March 8th the Honorary Secretary, Dr. Todd, made a statement, and it was agreed to form provisional Medical Committees. It was proposed that county boroughs should make their own arrangements, but that in county areas where the Division was not coterminous

with the insurance area the arrangements should be referred to the Contract Practice Committee.

THE Lumleian Lectures on Some Moot Points in the Pathology and Clinical History of Pneumonia, which were to be delivered by Dr. Percy Kidd, before the Royal College of Physicians of London, on March 21st, 26th, and 28th, are unavoidably postponed until May 30th, June 4th, and 6th.

THE next biennial health conference and exhibition is to be held at the Royal Horticultural Hall, Westminster, commencing on June 24th. It is being organized by Miss R. V. Gill, 35, Ludgate Hill, E.C., in co-operation with the National Health Society, and in addition to H.R.H. Princess Christian Schleswig-Holstein, has as patrons a large number of representative members of the medical profession. Admission will be free to all public workers who apply for tickets before the opening day.

MR. HENRY HORSLEY, Croydon, Consulting Surgeon to the Croydon General Hospital, on his entering his fiftieth year of active work in the town, was presented with a silver salver and a cheque, as a token of esteem and affection by numerous personal friends, and the committee and past and present members of the hospital staff. There was a large and representative gathering at the Croydon General Hospital on the occasion, the presentation being made by Sir F. Edridge, Chairman of the hospital.

THE Home Office has published a new edition of the list of the names, addresses, and districts of Certifying Factory Surgeons in England and Wales, revised to December 31st, 1911, and a similar list for Scotland has also been published. Copies can be obtained at the price of 1s. each, either directly or through any bookseller, from Messrs. Wyman and Sons, Ltd., Fetter Lane, London, E.C., and Messrs. Oliver and Boyd, Tweeddale Court, Edinburgh.

THE trustees of the Samaritan Fund at St. Thomas's Hospital are making an earnest appeal for contributions thereto, its income being relatively small as compared with the size of the institution served by it. In the fifty-ninth annual report they make out a good case for additional support by showing that the rapidity with which beds can be set free by the discharge of patients in an early stage of convalescence considerably depends on the work of the fund. Its secretary is Mr. Sidney Phillips.

THE Taylor Memorial Home of Rest, which was opened in June, 1910, for the reception of women suffering from incurable malignant disease, was a small house near the Birmingham and Midland Women's Hospital, and had accommodation for only 5 patients. New premises were opened by the Bishop of Birmingham (Dr. Russell Wakefield) on March 9th, and the larger building will afford accommodation for 20 patients. This has been fitted up at a cost of nearly £1,000, towards which a sum of £600 has already been received.

THE Second National Conference on the Prevention of Destitution will be held at the Caxton Hall, Westminster, from June 11th to June 14th. The conference is being organized on lines similar to those of last year, but its scope is to be somewhat extended. It will be divided into five sections: (1) Public Health; (2) Education; (3) Unemployment and Industrial Regulation; (4) Housing; (5) Crime and Inebriety. Among the discussions to be arranged is one on the administration of sanatorium benefit. Further particulars can be obtained from the Secretary, 37, Norfolk Street, Strand, W.C.

WE are asked to state that hospitals in the County of London, or within nine miles of Charing Cross, desiring to participate in the grants made by the King Edward's Hospital Fund for London for the year 1912, must make applications before March 30th to the Honorary Secretaries, 7, Walbrook, E.C. Applications will also be considered from convalescent homes which are situated within the above boundaries, or which, being situated outside, take a large proportion of patients from London. Applications will also be considered from sanatoriums for consumption which take patients from London, or which are prepared to place beds at the disposal of the Fund for the use of patients from London hospitals.

IT is announced that an optical convention is to be held in London next June. The project includes the holding of an exhibition of optical instruments and appliances of every kind, ancient and modern, with a special view to bringing out the performances of British workers in this direction. The President of the Board of Education, in response to a memorial signed by the presidents of nearly all bodies the work of whose members entails dependence on optical appliances, including the President of the Royal Society and the professors of physics at Oxford, Cambridge, and other universities, has given permission for the exhibition to be held at the Science Museum, South Kensington.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

G. G. desires to hear of a hospital or establishment in the North of England where a patient in rather poor circumstances could be treated by electric light baths for rheumatoid arthritis accompanied by much pain.

W. H. writes: Mr. Balding, L.D.S., has kindly drawn my attention to a paper in the *British Dental Journal* of January, 1912, p. 4, on "The Relation of the Thyroid Gland to Dentistry." It is stated here that the administration of this gland makes the secretions poured into the mouth alkaline; and hence prevents the acid erosion and decay of the teeth. Would any medical man kindly say if he has had any experience of this use of the thyroid; how soon it causes alkalinity; and if this reaction lasts long after discontinuing the drug?

ANSWERS.

VALGUM AND VARUM.

DEPUTY SURGEON-GENERAL J. J. DENNIS, R.N., writes: With reference to Captain Carmichael's query *re* bow-leg and knock-knee, I asked the same question in the JOURNAL some years ago and was told that the meanings had become transposed.

ASYLUM ADMINISTRATION IN IRELAND.

A MEMBER (Ireland).—General rules and regulations for the management of district lunatic asylums in Ireland were issued by the Lord Lieutenant and Privy Council in Ireland in 1894. Under Rule LVII, dealing with the duties of "assistant medical officer," we find that he "shall devote his whole time to the duties of his office." "He shall be responsible to the resident medical superintendent for the performance of his duties." "In the absence of the resident medical superintendent he—the senior, if more than one—shall act as superintendent." Rule XXXIII, dealing with the duties of the resident medical superintendent, provides as follows: "He shall devote his whole time to the duties of his office, and shall not engage in any professional or other business except that of the asylum, but nothing in these rules contained shall be construed to prevent the resident medical superintendent from accepting consultations in cases of mental disease, unless in the opinion of the inspectors such consultations shall interfere with the efficient supervision of the asylum." Section 9 of the Local Government (Ireland) Act, 1898, enabled Asylum Committees to draw up their own regulations, subject to the approval of the Lord Lieutenant and Privy Council. A rule, or absence of a prohibitive rule, enabling the assistant medical officer to undertake general consultations in the case in point may have been made, but it is extremely improbable. The regulations are practically the same as those issued by the Privy Council. The assistant medical officer "shall devote his whole time to the duties of his office," "be responsible to the resident medical superintendent," and "perform such duties as the resident medical superintendent may assign to him; the senior shall act as resident medical superintendent in the latter's absence." In the same way the resident medical superintendent "shall devote his whole time to the duties of the office, shall not engage in any professional or other business, except consultations in cases of mental disease." He may also visit any person at the request of the Lord Lieutenant, Lord Chancellor, the Prisons Board, Inspectors of Lunatics, inquiring into their mental condition, etc." Such rules are found in all the regulations throughout Ireland, and it would seem contrary to both the letter and the spirit of the regulations for an "assistant medical officer to engage in practice outside asylum by taking consultations in cases that are not of a mental nature." When acting as resident medical superin-

tendent he presumably comes under the same regulations, and this officer could not allow his subordinate to do what he himself is not allowed to do. Of course, occasional and exceptional emergencies may occur which are a law unto themselves.

LETTERS, NOTES, ETC.

Dr. Ernest F. Ballard (Somerset and Bath Asylum, Wells) writes: In the Journal of February 24th Dr. Johnston Abraham, in an interesting article on lâtah and âmok, states that there is no satisfactory explanation of these phenomena. I would like to suggest that these conditions are simply manifestations of a widespread hysteria. Hysteria is regarded as a hereditary anomaly of the nervous system, and is one of the best examples of similar heredity. Since certain families are victims of this diathesis there seems no reason why the same abnormality should not be exhibited by races of mankind. In fact, the prevalence of hysteria among the Latin races is well known. The actual attacks of lâtah would appear to be minor hysterical paroxysms, which are excited by similar causes. The course of the affection in Malays, and its results, are quite compatible with an identity with hysteria. Moreover, the temperament of the Malay, as described by Dr. Abraham, is essentially that of the hysteric. Again, lâtah, like hysteria, is commoner in women, and after puberty. One knows that some hysterics are able to control their disposition to paroxysms and various morbid episodes, and Dr. Abraham states that a few subjects of lâtah "are said to have cured themselves by determination not to succumb." Âmok may perhaps be regarded as a major paroxysm of hysteria, without convulsion. Emotional origin, aura, and clouded consciousness are characteristics of both conditions. The special form taken by these attacks in Malays is perhaps due to the inherent savage brutality of the race, illustrated, for example, by the custom of "head hunting," which coexists with a fair degree of civilization. In view of these points I submit that it is unnecessary to attribute lâtah and âmok to opium, hashish, betel chewing, climate, etc., as some people have done.

The Selborne Society.

Mr. Wilfred Mark Webb, F.L.S., Honorary General Secretary (42, Bloomsbury Square, London, W.C.), writes: I have read the very appreciative notice which you were good enough to give of the Gilbert White Exhibition, and it has occurred to me that some of your readers might care to hear what the Selborne Society is and does. It was constituted in the year 1885. At first it occupied itself more especially with the amenities, and since that time several other societies—such, for instance, as the National Trust—have come into existence and undertaken certain of its objects. As is right, it perpetuates the memory of Gilbert White, and its first intention now is to encourage the study of natural history. Through the Bird Sanctuary Committee of the Brent Valley Branch, it interests itself in attracting and providing nesting sites for wild birds, while a very necessary Plant Protection Section has recently been brought into existence. There are at the present 3,000 members, and, as the subscription (which includes *The Selborne Magazine*) is 5s. a year, many more are required if the society is to realize all its possibilities.

Free Telephones and Medical Men.

Dr. Henry M. Harrison (Dublin) writes: It may not be out of place to draw the attention of the general practitioners of Great Britain to a very feasible claim which they may make from the State—namely, that of a free telephone.

The Medical Commissioners and our representatives on the local Insurance Committees will doubtless aim at increasing the efficiency of contract work and otherwise bring it more into line with better-class private practice, and I think that much might be done in this direction if arrangements were made whereby every medical man engaged in State insurance work was supplied with a free (or at least partly free) telephone. The patient or patient's friends could make use of any convenient telephone, such as that of their local chemist, their business place, a shop, or one of the many public call offices, and they could thereby save much valuable time and inconvenience, and possibly expense, in communicating with their doctor.

A gentleman widely connected with the organization of contract work under the Act assures me that "the telephone will prove much more useful to the doctor than his assistant," and he also points out that the new class of patients now to be provided for will expect to be kept in touch with their doctor on lines similar (if not improved) to those they have enjoyed in the past, and that their example will be rapidly taken up by their more humble "associates."

Of course I can conceive how in some cases a doctor's services might be called upon for too trivial a complaint, particularly when it will cost the patient nothing; but in all such cases it will be open to the doctor to report the case to the local Insurance Committee, with a view to getting the patient put on to some colleague's list as an "undesirable patient," which designation will doubtless be sufficient punishment for the guilty patient, and, moreover, deter many others from running a similar risk.

I do not suggest that the matter should be taken up by the British Medical Association with the object of having any reference to it inserted in the scheme, but I think it should be left to local option, and, if approved of by the local committee, it might then be taken up by the Association and the Government asked to sanction the claim on the score of increasing the efficiency of its medical service. In any case, if we are united in our demands, there is nothing connected with the true efficiency of the service that is beyond our reach, for in all such demands we shall have the nation on our side.

Frumenty (Furmety).

Dr. Alfred Eddowes (London, W.) writes to suggest a cheap and excellent food for the poor—the old-fashioned frumenty or furmety. He recommends it strongly to those who are charitably distributing food among the most needy at the present time. Clean, unground, wheat is placed in a bowl of water or milk, or a mixture of both. The whole is kept warm (not hot) for twelve to forty-eight hours until the grains of wheat swell up to about double their ordinary size. Sufficient for a meal is then heated or boiled as it is required. If well managed the wheat swells and begins to sprout—in other words we produce a malted whole-wheat flour, which with milk and a little salt—or perhaps sugar for children—forms an ideal food. For adults the old-fashioned cooks usually flavoured it with allspice.

Diet in School.

A Conference on Diet in Schools is to be held at the Guildhall on Monday, May 13th. The Right Hon. the Lord Mayor (Sir Thomas Crosby, M.D.) will preside at the opening session. The committee is: Head Masters' Conference (Mr. F.B. Malim, Head Master of Haileybury), Head Mistresses' Association (Mrs. Scott, Godstowe School, and Miss Young, Secretary), Medical Officers of Schools Association (Dr. C. E. Shelly, President), Private Schools Association (Mr. A. H. Ozzard, Raleigh College), Association of University Women Teachers (Miss J. Watson), Parents' National Education Union (Miss Helen Webb, M.B.), Child Study Society (Dr. Eric Pritchard and Mr. W. J. Durrie Mulford, Honorary Secretary), the British Medical Association (Dr. Robert Hutchison); the Incorporated Association of Head Masters and Preparatory Schools Association have not yet made their appointments; Dr. Clement Dukes (Honorary Consulting Physician, Rugby School), Dr. M. D. Eder (Editor, *School Hygiene*), Mr. David Forsyth, Professor R. A. Gregory (Editor, *School World*), Mrs. Stanley Hazell, Mr. H. Holman, M.A. (Editor, *Child Study*), Dr. T. N. Kelynack (Editor, *The Child*), Professor F. Murison, M.A., LL.D (Editor, *Educational Times*), Miss Mullins, Mr. W. E. Mullins, M.A., Mr. A. T. Simmons (Editor, *School World*), Mr. Francis J. Storr, M.A. (Editor, *Journal of Education*), Dr. J. Odery Symes (late Medical Officer, Clifton College), Dr. J. Sim Wallace, L.D.S., Mr. W. L. Thompson (Editor, *Secondary Education*). The subjects to be discussed are the following: Diet as a factor in physical, intellectual, and moral efficiency; existing methods; the main lines of reform; instruction in the elements of physiology and personal hygiene; problems of institutional feeding; training in institutional management. It is proposed to call a further conference to consider the feeding of elementary school children and those in charitable institutions. Full particulars may be obtained from the Secretary, Mr. Charles E. Hecht, National Food Reform Association, 178, St. Stephen's House, Westminster.

The Admiral and the Surgeon.

The *Boston Medical and Surgical Journal*, on the occasion of the recent death of Admiral Robley D. Evans, recalled a story of the time when this gallant officer, then a midshipman, was seriously wounded in the assault on Fort Fisher during the Civil War. He was carried back to his ship, and laid bleeding in a bunk in the surgery with a shattering gunshot wound of the leg. After examining him, the ship's surgeon turned his back and began to lay out his intruments for amputation. "What are you going to do?" queried Robley. "Cut off your leg," said the surgeon. "Like hell you are!" said Robley. And the surgeon, turning round, looked down the barrels of two six-shooters and at Robley peering over the edge of his bunk. Admiral Evans walked on that leg to the end of his days. In this instance the logic of facts seems to have justified the admiral in his defiance of surgery.

London School of Clinical Medicine.

By an inadvertence, for which we wish to express regret, the name of Sir Malcolm Morris was omitted from the list of members of the staff of the London School of Clinical Medicine, which was published in a report of the annual dinner in the Journal of March 9th, p. 559.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

Note.—It is against the rules of the Post Office to receive *postes restante* letters addressed either in initials or numbers.